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Addiction and Recovery Treatment Services

Evaluation Report for State Fiscal Years 2020, 2021, and the first half of 2022

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Disclaimer

The conclusions in this report are those of the authors, and no official endorsement by Virginia Commonwealth University or the Virginia Department of Medical Assistance Services is intended or should be inferred.

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Executive Summary

Fatal drug-related overdoses increased precipitously between late 2019 and early 2022, peaking at around 108,000 deaths nationally and about 2,600 in Virginia.[1] This represents a 51% increase nationally and 69% increase in Virginia between December 2019 and December 2021. Although the increase began before the COVID-19 pandemic, economic and social stress related to the pandemic, disruptions in access to health services, and greater availability of more lethal forms of opioids, such as fentanyl, are considered the primary reasons for the surge in overdoses. Since late 2021, the increase in overdose deaths has leveled off, and even decreased in Virginia and other states that are part of the Appalachian region. Between June 2021 and June 2022, overdose deaths are estimated to have decreased by 1.5% in Virginia, while increasing nationally by 5.5%.[1]

As a result of the expansion of treatment services through the Addiction and Recovery Treatment Services (ARTS) benefit in April 2017, and increases in eligibility for these services through Medicaid expansion beginning in 2019, Virginia Medicaid was better prepared for the increased prevalence in substance use disorders (SUD) than in previous years. The supply of treatment providers, the prevalence of members receiving SUD treatment, and the rate of treatment for diagnosed SUD increased dramatically after implementation of the ARTS benefit and has continued through Medicaid expansion and the COVID-19 pandemic.[2]

The federal government and the Department of Medical Assistance Services (DMAS) also implemented several initiatives and procedural flexibilities to offset COVID-related access barriers to treatment, including increased use of telemedicine, allowing take-home dosages of methadone and buprenorphine for up to 28 days, allowing for 90-day prescriptions for buprenorphine products, and allowing a member's home to serve as the originating site for prescription of buprenorphine. In addition, the federal Families First Coronavirus Response Act (FFCRA) of 2020 increased the federal share of most Medicaid spending on the condition that states meet certain maintenance of eligibility (MOE) requirements, including pausing eligibility redeterminations and Medicaid disenrollment. This has allowed Medicaid members to stay enrolled in Medicaid continuously since the beginning of the COVID-19 pandemic, increasing overall enrollment.

The Department of Health Behavior and Policy at Virginia Commonwealth University School of Medicine is conducting an independent evaluation of the ARTS benefit. The evaluation of the ARTS demonstration renewal has three main goals:

1) Extend the post-implementation period of the evaluation beyond the first two years of ARTS to include the years 2019-2024. In particular, the evaluation will examine and account for the impact of Virginia's Medicaid expansion in 2019 on SUD prevalence, access to and quality of treatment services, and outcomes among the Medicaid population.

2) To strengthen conclusions about the causal impact of ARTS on key measures of access and quality of care by comparing adjusted summary statistics in Virginia to other states using the Medicaid Outcomes Distributed Research Network (MODRN).

3) To examine the cumulative impact of ARTS and Medicaid expansion on addiction treatment services for the Virginia population, using national data sources that permit comparisons of treatment before and after expansion in Virginia, and between Virginia, other states, and the

overall U.S. on selected measures of SUD treatment access, utilization, quality of treatment, and rates of fatal overdoses.

The primary objective of this report is to examine SUD prevalence, treatment utilization, and outcomes among Virginia Medicaid members during State Fiscal Years (SFY) 2020, 2021, as well as the first two quarters of SFY 2022 (covering the period July 2019 through December 2022). Among the highlights of the report:

Increased prevalence of SUD

- 116,000 Medicaid members had a diagnosed SUD in SFY 2021, an increase of 14% from SFY 2020. On a per member basis, SUD prevalence increased by 6.5% to 6,567 members per 100,000 with a SUD diagnosis in SFY 2021. This represents a much lower rate of increase than observed between SFY 2019 and 2020 (30% overall and 16% per member increase, respectively), which was driven by Medicaid expansion and possibly the beginning of the COVID-19 pandemic.

- While opioid use disorder (OUD) continues to be the most frequently diagnosed SUD among Medicaid members (about 41% of all diagnosed SUD), the prevalence rate increased faster for other substances between SFY 2019 and 2020, especially for hallucinogens (a 45% increase).

Increase in treatment providers

- The number of buprenorphine waivered prescribers increased to over 1,500 prescribers in 2022, a 33% percent increase from 2021. Increases in waivered prescribers were especially large for nurse practitioners and physician assistants, who now comprise a greater number of waivered prescribers than physicians.

- The number of pharmacies dispensing buprenorphine to Medicaid members has increased 44% since the beginning of the ARTS benefit, although one-fourth of all pharmacies did not dispense any buprenorphine for treatment of OUD in 2021.[1] Access to buprenorphine-dispensing pharmacies may be more restricted in some areas of the state, such as the Southwest region.

Increased use of ARTS services

- Use of ARTS services continued to increase between SFY 2020 and SFY 2021, with a total of 53,614 members receiving any type of ARTS treatment service in SFY 2021 (a 24% increase from SFY 2020).

- Treatment rates (the percent of members with a diagnosed SUD who received any ARTS treatment service) are highest among members with an OUD diagnosis (69.4%) but lower among members with other SUD diagnoses, such as alcohol use disorder (27.1%), stimulant use disorder (34.3%) and cannabis use disorder (16.5%).

[1] Buprenorphine for treatment of pain was not included in this analysis.

- MOUD treatment rates (the percent of those with OUD diagnoses who were treated with one of three MOUD medications) increased from 64% in SFY 2020 to 78% in SFY 2021. While buprenorphine remains the most frequently prescribed MOUD treatment, use of methadone and naltrexone also increased.

Residential treatment and pharmacotherapy account for half of ARTS expenditures

- Among members who use ARTS services in SFY21, only 9% utilized residential treatment services (ASAM 3), with an average length of stay of 15.5 days. However, residential treatment services account for 26.3% of all expenditures for ARTS services.

- Medically managed intensive inpatient services (ASAM 4) are acute hospital or inpatient psychiatric admissions related to SUD, offering 24 hour nursing care and daily physician care for severe, unstable problems. While these services account for a small fraction of ARTS expenditures (2.5%), they are the most expensive on a per member basis ($50,562 per member who used ASAM 4 services in SFY 2021).

- While pharmacotherapy for MOUD is one of the most heavily utilized ARTS services and accounts for about one-fourth of ARTS expenditures, it has relatively low expenditures on a per member basis ($2,220 per member who utilized pharmacotherapy in SFY 2021).

Treatment gaps in transitions from emergency departments and residential treatment

- Many members who had OUD-related emergency department (ED) visits do not receive follow up care or MOUD treatment. Only 27% of members with an OUD-related ED visit received MOUD treatment within 7 days of the visit, and 37% received MOUD within 30 days of the ED visit. Receipt of MOUD following the ED visit was especially low among those who were not receiving treatment prior to the ED visit.

- More members receive follow up care after discharge from residential treatment, with 54% receiving MOUD within 30 days of discharge. However, follow up MOUD use was lower among those who had not been receiving MOUD treatment prior to the residential stay.

Recently incarcerated at greater risk for OUD and overdoses

- New Medicaid enrollees recently released from state prisons were four times as likely as other new Medicaid enrollees to receive an OUD diagnosis within 6 months of enrollment, and they were five times as likely to have had a fatal or nonfatal overdose.

- Once diagnosed with OUD, formerly incarcerated members tend to have higher rates of outpatient and MOUD treatment compared to other new Medicaid enrollees with OUD, and they are only slightly more likely to experience an overdose.

OUD-related overdose rates may have peaked.

- OUD-related overdoses per 100,000 Medicaid members (fatal and nonfatal) increased 25% between SFY 2020 and SFY 2021.

- A more detailed analysis of overdose rates on a quarterly basis shows that while they rose precipitously through most of 2020, overdose rates have fluctuated since then. Also, overdose rates decreased during the first two quarters of SFY 2022.

The Commonwealth of Virginia has made substantial progress since the implementation of the ARTS benefit in 2017 in building a robust treatment infrastructure for Medicaid members, with the number of treatment providers, members using services, and treatment rates for those with SUD diagnoses increasing every year since 2017. Continued progress will depend in part on addressing ongoing gaps in treatment, especially care transitions following discharges from hospitals, residential treatment centers, and carceral settings, as well as addressing uneven access to providers and pharmacies in some areas of the state. System capacity to treat patients may also benefit in the future to the extent that COVID-19 related increases in SUD prevalence and overdoses have leveled off and continue to decrease.

Introduction

Fatal drug-related overdoses surged in Virginia and the nation during 2020 and 2021. Nationally, fatal drug overdoses peaked at around 108,000 deaths in the 12 months ending February, 2022, a 12% increase from the previous year, and a 43% increase from the year ending February 2020.[1] During the same two year period, fatal overdoses in Virginia increased 65%, to almost 2,600 deaths in February 2022.[1] Early reports indicate that fatal drug overdoses may have declined in 2022 in both Virginia and 7 and other states, although it is too early to know if this is temporary or the beginning of a longer-term trend.

Opioids continue to account for the majority of overdose deaths in the U.S. (75%) and Virginia (84%). However, there has been a marked shift in the type of opioids responsible for overdoses. In Virginia, deaths from fentanyl overdoses more than doubled between 2019 and 2022 (from 964 to 1,952), while there was little change in deaths due to prescription opioids, and even a small decrease in deaths from heroin.[3] Fentanyl accounted for 93% of opioid-related fatal overdoses in Virginia in 2022, compared to 74% in 2019 and 55% in 2016. At the same time, overdose deaths in Virginia due to methamphetamines and cocaine increased by 183% and 85%, respectively, between 2019 and 2022.[3] An increase in alcohol use disorder is also contributing to increased mortality from substance use, accounting for 95,000 deaths nationally and 22.1% of prescription opioid overdose deaths.[4,5]

There are a number of possible reasons for the surge in fatal overdoses and greater use of drugs and alcohol during the COVID-19 pandemic, including increases in the supply and availability of illicit drugs – especially fentanyl and methamphetamines – economic dislocation, unemployment, greater social isolation, and an increase in co-occurring mental health problems.[6] Also, access to addiction treatment services may have become more difficult due to COVID-related shutdowns and more restrictions on face-to-face meetings with clinicians and peer recovery specialists, a health system that has been severely strained by the pandemic, and growing shortages of behavioral health providers in Virginia and the nation.[7]

Although it is too early to know conclusively, the leveling off and slight decrease in fatal overdoses during 2022 in some states (including Virginia) may reflect in part an easing of the most severe social, economic, and health system pressures experienced during the height of the pandemic, along with greater public health awareness and efforts to educate the public about the dangers of fentanyl. Notably, the overall decrease in fatal drug overdoses in Virginia in 2022 is driven by a decrease in fentanyl-related overdose deaths, from 2,039 deaths in 2021 to a projected 1,952 in 2022.[3]

Virginia has benefitted from a major expansion of treatment services for SUD in the Virginia Medicaid program. In April 2017, the Addiction and Recovery Treatment Services (ARTS) benefit was implemented. ARTS expanded coverage of many addiction treatment services for Medicaid members, aligning with the American Society of Addiction Medicine (ASAM) levels of care, including community-based services, short-term residential treatment and inpatient withdrawal management services. To allow federal Medicaid payment for addiction treatment services provided in inpatient and short-term residential facilities with 16 or more beds, a Section 1115 Demonstration Waiver for SUD was approved in December 2016 by the Centers for Medicare and

Medicaid Services (CMS), and an extension of this demonstration through 2024 was approved by CMS in December 2019. ARTS also increased provider reimbursement rates for many existing services and introduced a new care delivery model for treatment of Opioid Use Disorders (OUD), the Preferred Office-Based Addiction Treatment (OBAT) provider. OBATs integrate medications for OUD (MOUD) with co-located behavioral and physical health by incentivizing increased use of care coordination activities. Per requirements of Item 313, section ZZZ of the 2020 Appropriations Act, DMAS expanded the OBAT model effective March 1, 2022, to allow for other primary SUDs in addition to OUD.[8]

To further increase integration of addiction treatment services with other health services covered by Medicaid, SUD services are administered by the contracted managed care organizations (MCOs) that manage medical and behavioral health benefits for all Medicaid members, offering a comprehensive care delivery system. During this reporting period, Virginia contracted with six managed care organizations through the two managed care programs: Medallion 4.0 and Commonwealth Coordinated Care Plus (CCC Plus). Medallion 4.0 serves children, pregnant women and adults. CCC Plus serves older adults, children, and adults with disabilities, and individuals receiving long-term services and supports (LTSS).

While ARTS greatly increased the availability and quality of treatment services to Medicaid members, eligibility for these services increased on January 1, 2019, when Virginia expanded Medicaid eligibility for adults ages 19-64 with family incomes of up to 138 percent of the federal poverty level, as allowed for under the Patient Protection and Affordable Care Act. By July 1, 2022, 671,000 members were enrolled through the ACA Medicaid expansion benefit.[9] During the COVID-19 pandemic, Medicaid expansion provided an important safety net for many people who lost their job and their employer-based private health insurance coverage.

Prior evaluation reports on the ARTS benefit have documented the impact of ARTS and Medicaid expansion on utilization of ARTS services. The number of Medicaid members using ARTS treatment services more than doubled, from 17,120 in 2017 to 46,520 in 2019.[10] Among those with OUD, the percent using MOUD treatment increased from 35% in 2016 to 53% in 2019, an increase that was far greater than for Medicaid members in twelve other states.[9] At the same time, ED visits among those with OUD decreased (relative to Medicaid members who did not have OUD), although this analysis preceded the more recent surge in overdose deaths.[11]

Increased prevalence of SUD during the COVID-19 pandemic increased the demand for ARTS services. To offset potential barriers to treatment access due to pandemic-related restrictions, DMAS implemented a number of new initiatives and procedural flexibilities that the federal government permitted as part of the emergency response to COVID-19. These include allowing take-home dosages of methadone and buprenorphine for up to 28 days (which otherwise must be administered at Opioid Treatment Programs (OTPs)), allowing a member's home to serve as the originating site for prescription of buprenorphine, allowing a 90-day supply of buprenorphine, increased use of telehealth, waiver of drug copayments, and fewer restrictions on the use of certain unlicensed providers. In compliance with federal legislation, eligibility redeterminations and coverage cancellations have been suspended in order to increase continuity of coverage and prevent coverage lapses during the pandemic. With the end of the federal Public

Health Emergency in May, 2023, eligibility redeterminations will resume, potentially resulting in more Medicaid members losing eligibility. Despite this, many of the access initiatives and procedural flexibilities implemented at the beginning of the pandemic will be maintained.

The objective of this report is to examine SUD prevalence, treatment utilization, and outcomes among Virginia Medicaid members during State Fiscal Year (SFY) 2020 and 2021, as well as the first two quarters of SFY 2022 (covering July 2019 through December 2021). This time period overlaps with the COVID-19 pandemic that began in March 2020, which has led to substantial increases in the diagnosed prevalence and treatment of SUD among Medicaid members. Some measures in the report related to the supply of treatment providers correspond to calendar year or other time periods.

Methodology

Most of the analysis in this report is based on paid claims for services received by Virginia Medicaid members. As a consequence, the analysis excludes services received during periods in which individuals were not enrolled in Medicaid, services not covered by Medicaid, and claims that were submitted and denied or otherwise processed and not reimbursed at the time of data extraction and analysis for this report (September through November 2022). In general, a "claims runout" period of 10-12 months is a sufficient period for the vast majority of claims to be processed for services received through December 2021.

Diagnosed prevalence of SUD is defined as a member having any claim during the study period with a primary or secondary diagnosis of SUD, based on ICD-10 codes. Measures of the utilization of ARTS services are based on the procedure codes and ICD-10 diagnostic codes used by DMAS, MCOs, and treatment providers to bill for the various ARTS services. These services correspond to the ASAM continuum of care, ranging from medically managed intensive inpatient services (ASAM level 4), residential care (ASAM 3), intensive outpatient and partial hospitalization (ASAM 2) and outpatient treatment services (ASAM levels 1 and 2).[12] Services received in Preferred OBAT and OTP providers are identified separately, as are services for peer recovery support, case management, and care coordination. Pharmacotherapy services are identified through pharmacy claims based on National Drug Codes and Generic Sequence Numbers for prescriptions used to treat OUD (buprenorphine, naltrexone) and Alcohol Use Disorder (AUD), as well as procedure codes for methadone treatment in OTPs.

SUD-related ED visits are defined as ED visits with a primary or secondary diagnosis of SUD, as described above. OUD-related overdoses include fatal as well as nonfatal overdoses based on ICD-10 diagnosis codes for overdoses and poisonings that have been previously validated.[13] Only overdoses that are treated in health care settings and for which the submitted claim was reimbursed by Medicaid are included in this definition. An overdose is excluded if it occurred in the community, did not involve contact with health care providers and was not reimbursed through a Medicaid claim.

Supply of Addiction Treatment Providers

A broad range of addiction treatment facilities and practitioners are available to Medicaid members along the continuum of care, as defined by the ASAM placement criteria.[12] These include hospital-based intensive inpatient facilities, residential treatment centers, and outpatient providers of varying types and treatment intensity. The ARTS benefit also introduced a new model of care delivery, the Preferred OBAT, that pays significantly higher reimbursement rates to qualified providers for medication-assisted treatment (including pharmacotherapy and behavioral health therapy) and coordination with other medical and social needs. The Preferred OBAT model initially was limited to individuals with primary OUD. However, DMAS expanded this benefit in 2022 to allow for reimbursement of other primary SUD. Although there was some decrease in residential treatment providers and intensive outpatient programs between 2020 and 2022, Virginia has seen substantial increases across all types of addiction treatment providers and facilities since ARTS was implemented in 2017. These providers serve not only Medicaid members, but also individuals with other insurance or who are uninsured. The expansion of the provider network supported through ARTS has benefited all individuals in the Commonwealth through increased access to treatment and recovery services based on the ASAM Criteria.

Providers for ARTS Services

Addiction Provider Type	# of Providers before ARTS (2017)	# of Providers in 2020	# of Providers in 2022
Inpatient Detox (ASAM 4.0)	N/A	51	70
Residential Treatment (ASAM 3.1, 3.3, 3.5, 3.7)	4	123	95
Partial Hospitalization Programs (ASAM 2.5)	N/A	41	40
Intensive Outpatient Programs (ASAM 2.1)	49	252	209
Opioid Treatment Programs (OTP)	6	40	43
Preferred Office-Based Addiction Treatment Providers (OBAT)	N/A	154	200
Outpatient practitioners billing for ARTS services (ASAM 1)	1,087	5,089	6,184

Buprenorphine Waivered Prescribers

There are three Food and Drug Administration (FDA) approved medications for treatment of OUD: methadone, naltrexone and buprenorphine. Methadone for the treatment of OUD is federally limited to being dispensed in specially licensed clinics, although these restrictions were loosened during the COVID-19 pandemic to allow take-home dosages of up to a 28 day supply. Because buprenorphine treatment for OUD does not require that medication be administered at OTPs, it allows for greater access to MOUD treatment in a wider variety of treatment settings, provider types, and specialties. Virginia Medicaid has promoted the prioritization of patient choice in the selection of evidence-based medication for treatment of OUD. This includes a targeted effort to increase access to buprenorphine treatment through the Preferred OBATs in 2017 – an

integrated care model that receives enhanced reimbursement for OUD treatment – and eliminating the need for prior authorization for buprenorphine prescribing for practitioners regardless if they are enrolled with DMAS, its contractors, or MCO networks. During the COVID-19 pandemic, DMAS permits a member's home to serve as the originating site via telemedicine for a prescription of buprenorphine, both for induction and maintenance dosing. Prior to the pandemic, buprenorphine prescriptions for inductions could only be obtained through a face-to-face meeting with authorized prescribers as required by Substance Abuse and Mental Health Services Administration (SAMHSA) and the Drug Enforcement Agency.

Prior to 2023, prescriptions for buprenorphine could only be received from practitioners who apply for and receive waivers through SAMHSA. Research has shown that increases in the number of practitioners who receive waivers are associated with increases in the quantity of prescribing and the number of patients served, and fewer overdoses.[14,15] Therefore, having an adequate supply of buprenorphine-waivered prescribers in the Commonwealth is crucial for patient access to OUD treatment and outcomes.

The expansion of benefits with ARTS, collaborative efforts with the Virginia Department of Health to train and encourage more providers to seek buprenorphine waivers, and the increase in Medicaid members eligible for ARTS services through Medicaid expansion has likely contributed to an increase in waivered prescribers. Prior research has shown that Medicaid expansion in other states led to an increase in buprenorphine prescribing capacity.[16]

The number of waivered prescribers in Virginia has increased steadily each year since the ARTS benefit began. Between 2019 and 2022, the number of waivered prescribers in the state increased by 80.8%, from 852 prescribers in 2019 to 1,540 in 2022. However, most of the increase occurred among those with a limit of 30 patients (from 573 in 2019 to 1,132 in 2022), whereas the number with higher patient limits (100 or 275) increased more modestly. Research has shown that prescribers with 30 patient limits are less likely to treat Medicaid patients relative to those with higher limits.[17]

Number of X-waivered Prescribers in Virginia (As of June For Each Year)

	2019	2020	2021	2022	% change 2019-22
All prescribers	852	1017	1160	1540	80.8%
Patient limit					
30	573	730	794	1,132	97.6%
100 or 275	279	314	366	408	46.2%
License type					
MD or DO	617	628	614	750	21.6%
Nurse practitioner	200	330	458	642	221%
Physician assistants	35	59	88	148	322.9%

Increasingly important to the supply of waivered prescribers are nurse practitioners and physician assistants. Since the federal Comprehensive Addiction and Recovery Act (CARA) of 2016, nurse practitioners and physician assistants are also permitted to obtain waivers to prescribe buprenorphine. Nurse practitioners in Virginia can get approval to practice autonomously from physicians if they have 5 or more years of experience (it had been reduced to 2 or more years of experience starting July 2021, before reverting back to a minimum of 5 years starting July 2022). Since 2019, the number of waivered nurse practitioners has increased 221%, while the number of waivered physician assistants has increased 323% (compared to a 21.6% increase for MDs or DOs). While nonexistent prior to 2017, the combined number of waivered nurse practitioners and physician assistants now outnumber waivered physicians.

The growth in waivered prescribers among nurse practitioners is especially important, as research has shown they are twice as likely to treat Virginia Medicaid patients compared to MDs, and almost three times as likely to treat large numbers of Medicaid patients.[17] As only about 40% of buprenorphine-waivered prescribers treated any Medicaid patients in 2019, continued growth in nurse practitioners and physician assistants with waivers will likely help to address gaps in supply of and access to buprenorphine treatment among Medicaid members.

Pharmacies that dispense buprenorphine

Most buprenorphine prescriptions for treatment of OUD are obtained at retail pharmacies. However, some pharmacies do not dispense buprenorphine, while others often restrict the quantity of buprenorphine dispensing. A recent nationwide audit study of pharmacies in counties with a high opioid overdose rate found that one in five pharmacies did not dispense buprenorphine, with independent pharmacies and those in Southern states being more likely to restrict buprenorphine.[18] Pharmacies may decline to stock buprenorphine or limit dispensing for a number of reasons. Because of concerns that buprenorphine can be diverted for illicit purposes, federal law requires wholesalers to monitor controlled substance orders from pharmacies and report suspicious activity to the Drug Enforcement Agency (DEA). As this could trigger a DEA investigation, some pharmacies may decline to dispense buprenorphine, or place strict limits on the amount they dispense. Stigma towards patients with OUD and distrust of clinician prescribing patterns also may limit buprenorphine dispensing at pharmacies.[19,20] Members with OUD who do not have access to pharmacies that dispense buprenorphine, or who need to travel long distances to obtain new prescriptions or refills, may be less likely to initiate or continue with buprenorphine treatment.

We used Medicaid pharmacy claims to identify individual pharmacies that prescribed medications to Medicaid members, as well as pharmacies that specifically prescribed buprenorphine. In 2021, there were 1,604 pharmacies statewide that dispensed any type of medication to Medicaid members, out of which 1,180 (73.6%), dispensed buprenorphine to Medicaid members. Overall, there were 424 Virginia pharmacies in 2021 that did not dispense buprenorphine to Medicaid members, although it is possible that some of these pharmacies stock buprenorphine but did not receive any prescriptions for Medicaid members in that year.

Pharmacies Dispensing Buprenorphine for Medicaid Members

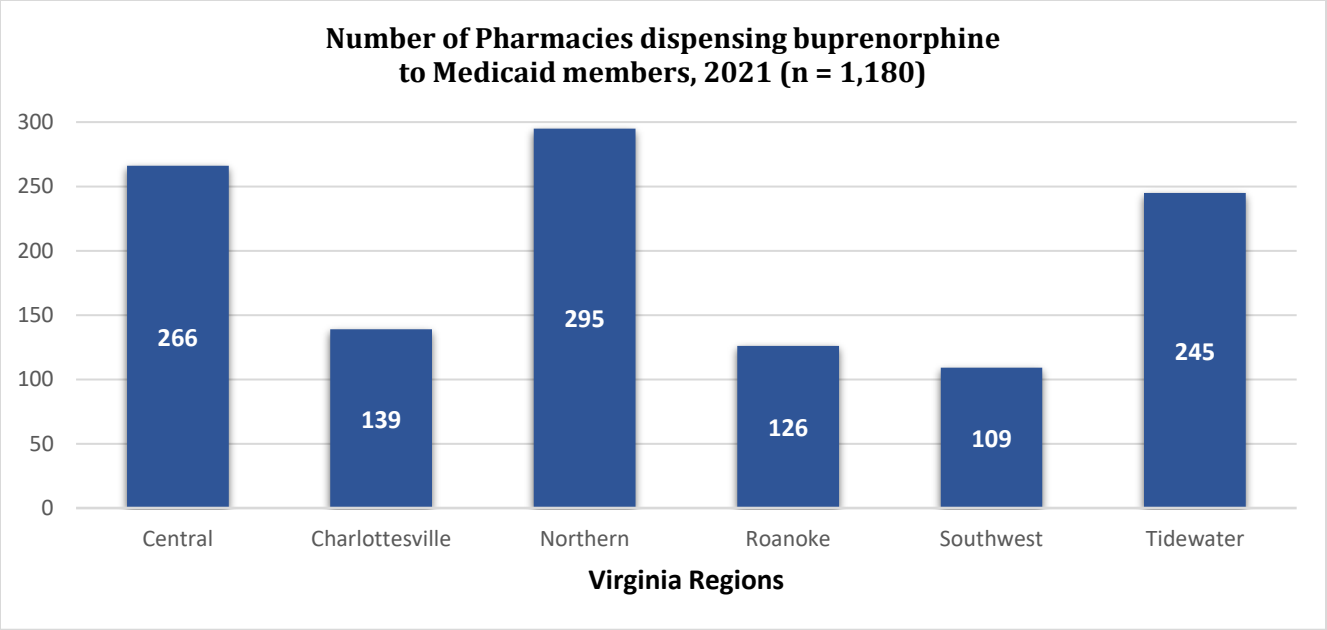
	2017	2019	2021	% change 2017-2021
Number of pharmacies with any Medicaid prescriptions	1,519	1,606	1,604	5.6%
Number of pharmacies with any prescription for buprenorphine	820	1,077	1,180	43.9%
Number of pharmacies with buprenorphine Rx, as a proportion of all pharmacies	54.0%	67.1%	73.6%	36.3%
Total number of buprenorphine prescriptions dispensed	67,980	162,636	278,516	309.7%
Average number of buprenorphine prescriptions per pharmacy	82.9	151.0	236.0	184.7%

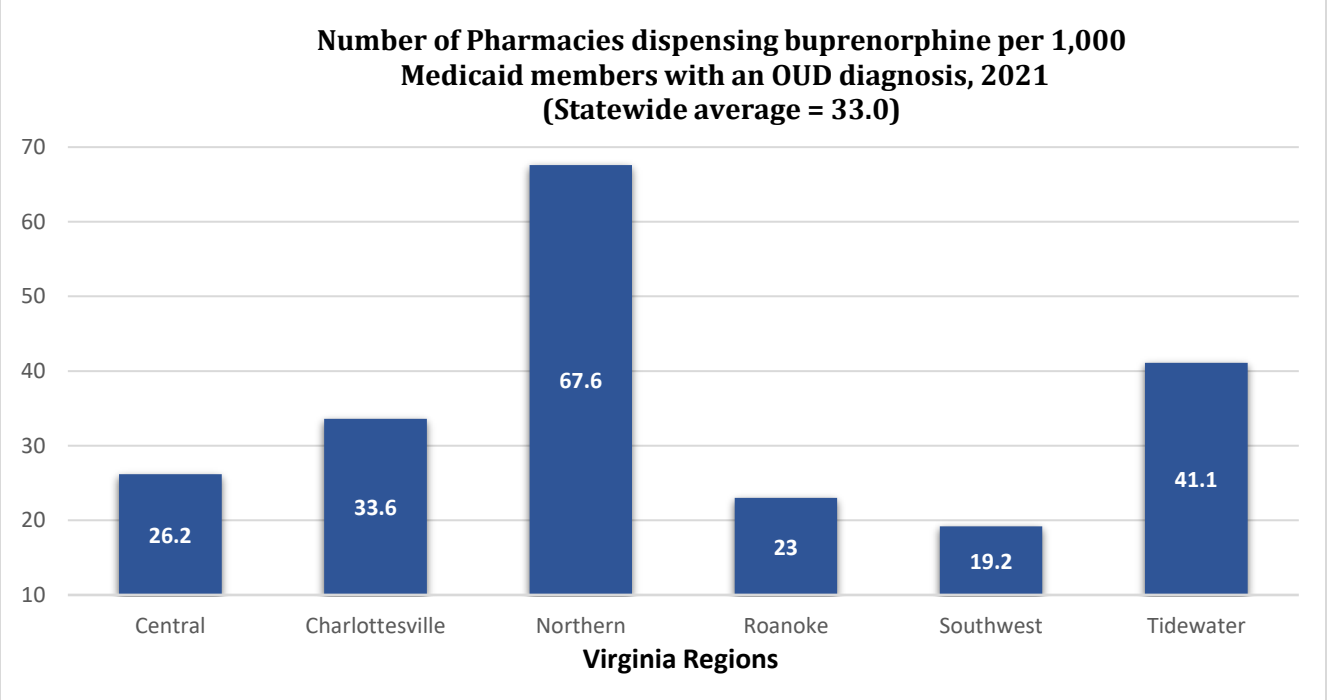
While the overall number of pharmacies prescribing to Medicaid members has remained relatively constant, the number of pharmacies dispensing buprenorphine has increased greatly, from 820 pharmacies in 2017 to 1,180 in 2021, a 44% increase. As a result, the share of pharmacies dispensing buprenorphine prescriptions increased from 54% in 2017 to 73.6% in 2021. The average number of buprenorphine prescriptions per pharmacy has also increased, from an average of 82.9 prescriptions per pharmacy in 2017, to 236 prescriptions per pharmacy in 2021, a 184.7% increase.

Regional Variation in Pharmacy Dispensing of Buprenorphine

The most heavily populated regions of the state – Northern, Central and Tidewater – have correspondingly the largest number of pharmacies that dispense buprenorphine (295, 266, and 245, respectively).

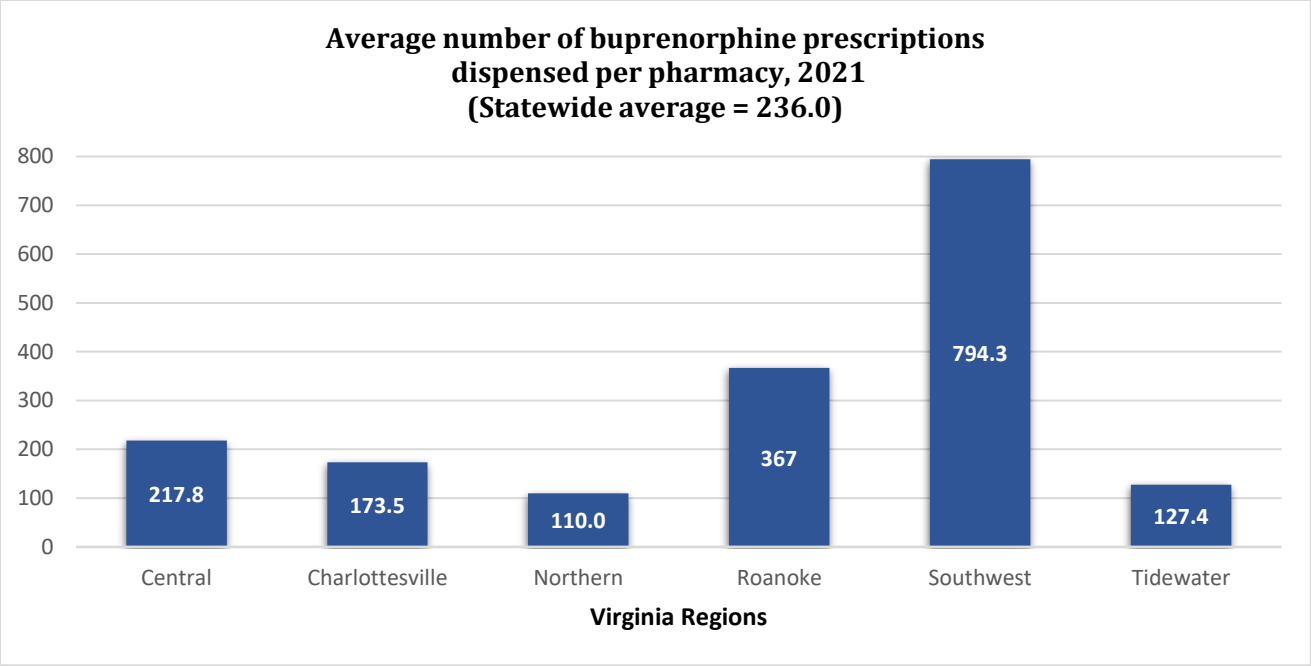
A more accurate assessment of regional variation in the number of buprenorphine-dispensing pharmacies accounts for differences in potential demand, as indicated by the number of members with a diagnosed OUD. By this measure, the Northern region has by far the largest number of buprenorphine-dispensing pharmacies, with 67.6 pharmacies per 1,000 Medicaid members with OUD. By contrast, the Roanoke and Southwest regions – which have some of the highest OUD prevalence rates among all regions – have relatively fewer pharmacies (23 and 19.2 pharmacies per 1,000 members with OUD, respectively).





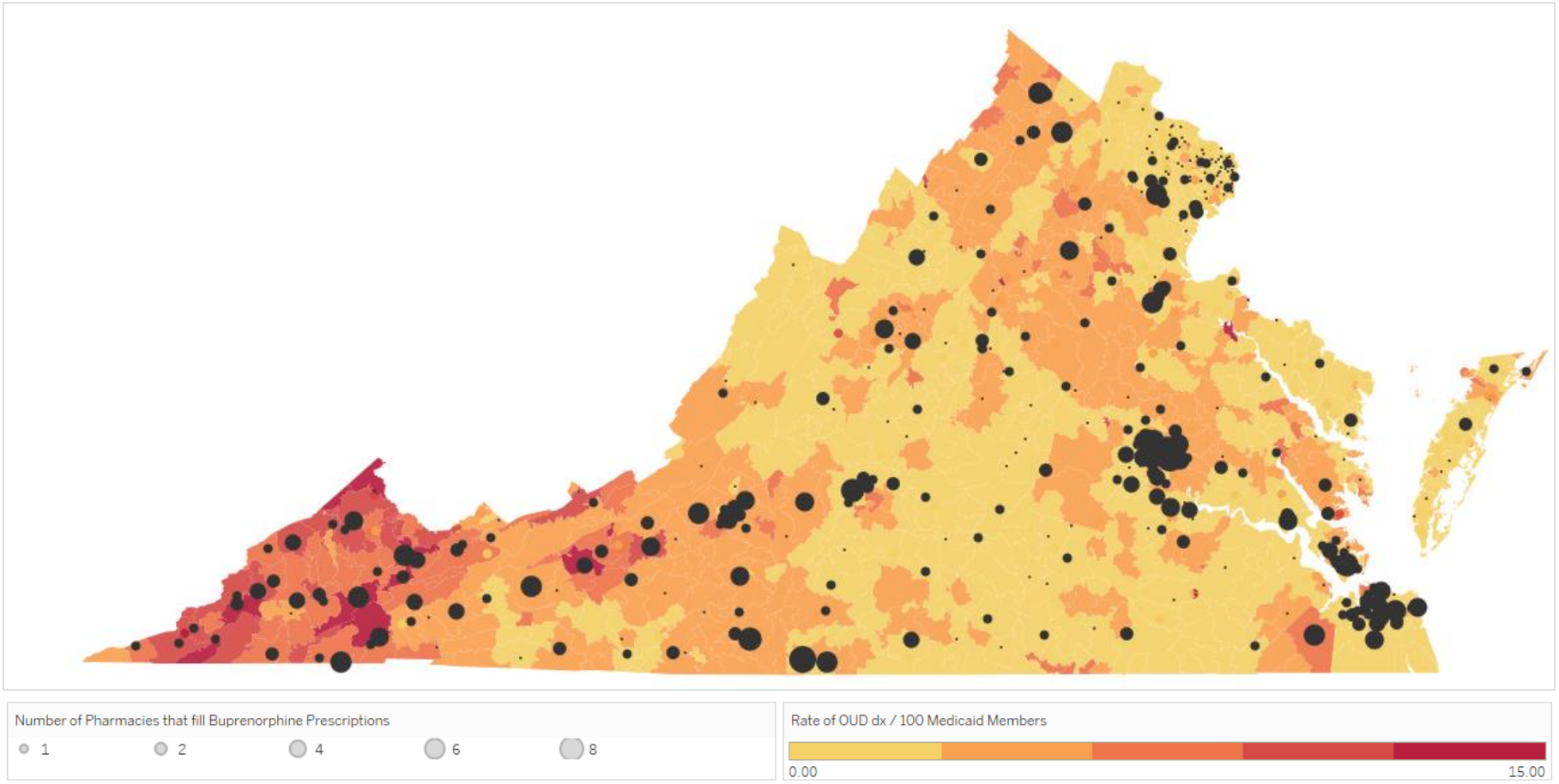
With fewer pharmacies that dispense buprenorphine, pharmacies in Southwest dispense much higher quantities of buprenorphine (794 buprenorphine prescriptions per pharmacy) compared to pharmacies in Northern (110 prescriptions per pharmacy) and other regions of the state. The limitations these pharmacies have on how much buprenorphine they are able and willing to dispense are unknown. Regardless, access to buprenorphine in Southwest could be more difficult not only because there are fewer pharmacies overall that dispense buprenorphine, but it is

likely that at least some of the pharmacies "max out" on how much buprenorphine they are able and willing to dispense over the course of the year.



The map below provides a more detailed depiction of the location of pharmacies that dispense buprenorphine to Medicaid members in Virginia. These locations are overlaid on top of OUD prevalence rates at the zip code level, with darker shaded areas indicating higher prevalence of OUD.

OUD Prevalence Rate with Count of Pharmacies per zip code



Diagnosed Prevalence of Substance Use Disorders

Over 116,000 Medicaid members had a diagnosed SUD in SFY 2021, an increase of 14.3% from SFY 2020. As in prior years, OUD was the most frequently diagnosed SUD in SFY 2021 (48,008 members) followed by AUD (44,038 members), cannabis (35,911 members), and stimulants, which includes the use of methamphetamines (27,226 members).

SUD diagnoses related to stimulant use and cannabis is concerning given the 19.4% and 26.9% increase, respectively, in Medicaid members with these diagnosis between SFY 2020 and 2021. During the same period, diagnosed OUD prevalence increased by 13.1% and AUD by 14.8%. There was also a 55.4% increase in diagnoses related to hallucinogens, although overall prevalence of hallucinogens is still very low (only 1,290 members with diagnoses in SFY 2021).

The increase in SUD prevalence is partially related to increases in Medicaid enrollment, from 1.48 million average monthly enrollment in SFY 2020 to 1.74 million average monthly enrollment in SFY 2021, a 17 percent increase.[9] However, the prevalence rate for SUD (calculated as the number of members with a SUD diagnosis per 100,000 members) increased by 6.5%, from 6,168 with a SUD diagnosis per 100,000 members in SFY 2020 to 6,567 per 100,000 members in SFY 2021.[ii] The increase in the prevalence rate was higher for SUD diagnoses related to hallucinogens use (44.8%), Cannabis (18.2%), Sedatives (12.6%), and stimulants use (11.2%).

Diagnosed prevalence of SUD, SFY 2020 and 2021

	Number of Medicaid members with diagnosis			Members with diagnosis per 100,000 members		
SUD diagnoses	**SFY 2020**	**SFY 2021**	**Percent change**	**SFY 2020**	**SFY 2021**	**Percent change**
Any SUD	101,875	116,451	14.3%	6,168	6,567	6.5%
Opioid use disorder (OUD)	42,435	48,008	13.1%	2,569	2,707	5.4%
Alcohol use disorder (AUD)	38,374	44,038	14.8%	2,323	2,483	6.9%
Cannabis	28,309	35,911	26.9%	1,714	2,025	18.2%
Hallucinogens	830	1,290	55.4%	50	73	44.8%
Inhalants	172	191	11.0%	10	11	3.4%
Sedatives, hypnotics, etc.	4,816	5,821	20.9%	292	328	12.6%
Stimulants	22,806	27,226	19.4%	1,381	1,535	11.2%
"Other or unknown"	23,583	26,071	10.5%	1,428	1,470	3.0%

SUD prevalence rates are much higher among nonelderly adults compared to youth and elderly members. The percent of members with a diagnosed SUD ranges from 10.5% to 12.9% for members ages 22-64, compared to 2.3% for members ages 12-21, and 5.3% for members aged 65 and older. SUD prevalence rates are also higher for males compared to females, although OUD prevalence is similar for both gender groups. Diagnosed prevalence is also higher for White, non-Hispanic members (7.9%) compared to Black, non-Hispanic members (6.0%) and Hispanic

[ii] For the purposes of computing prevalence rates and to be consistent with the way that annual prevalence was computed, Medicaid enrollment was computed as the number with full-benefit Medicaid coverage at any point in the State Fiscal Year. This differs from the average monthly enrollment numbers mentioned above.

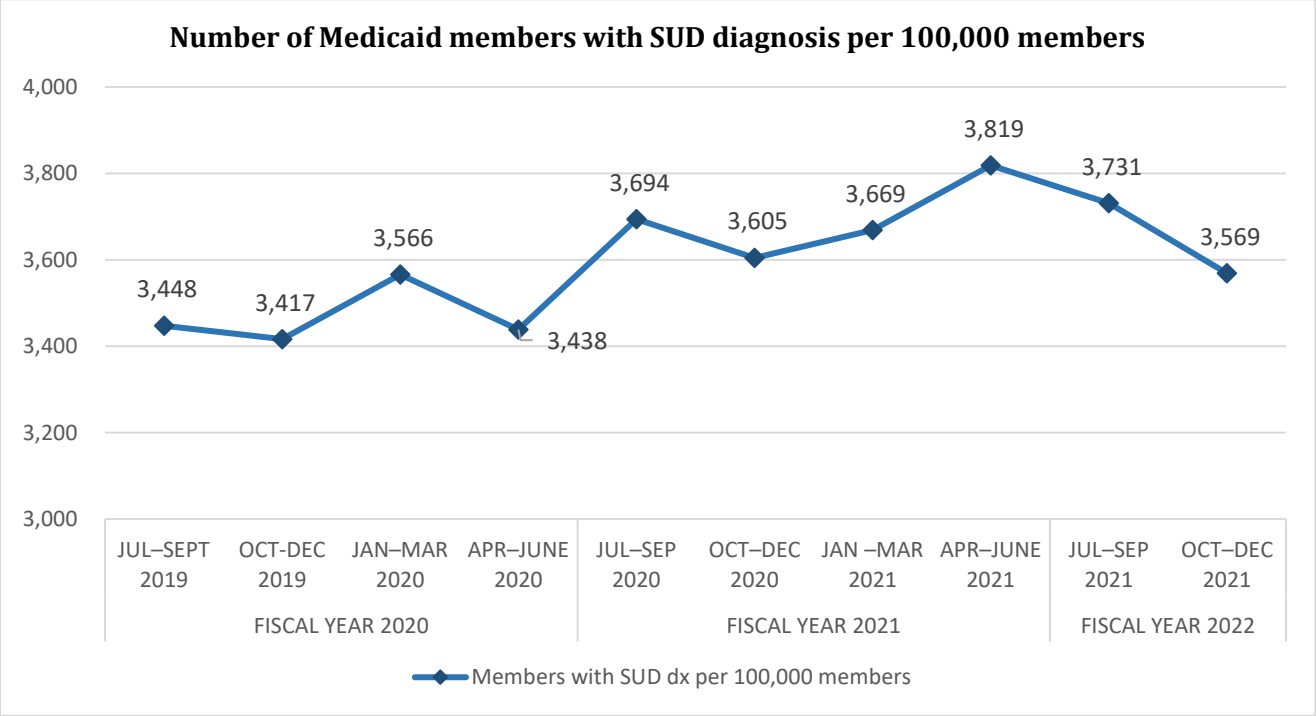
members (2.9%), although the prevalence rate for cannabis diagnosis is higher for Black and Hispanic members compared to White members. Consistent with age-related differences in prevalence, prevalence rates are higher among Medicaid expansion and other non-disabled adults compared to members in other Aid categories.

Prevalence of diagnosed SUD, by member characteristics, SFY 2021

	% with any SUD	% with OUD	% with AUD	% with cannabis diagnosis	% with stimulants diagnosis
All Medicaid members	6.6%	2.7%	2.5%	2.0%	1.5%
Age					
12-21	2.3%	0.3%	0.5%	1.6%	0.3%
22-34	10.5%	4.9%	3.1%	4.2%	2.8%
35-44	14.0%	7.5%	4.6%	3.9%	3.8%
45-54	14.0%	6.2%	6.2%	3.0%	3.6%
55-64	12.8%	4.1%	7.4%	2.1%	2.5%
65+	5.3%	1.8%	3.0%	0.5%	0.6%
Sex					
Male	7.7%	3.2%	3.5%	2.4%	1.9%
Female	5.6%	2.4%	1.7%	1.8%	1.3%
Race/ethnicity					
White, non-Hispanic	7.9%	3.9%	2.8%	2.1%	1.9%
Black, non-Hispanic	6.0%	1.7%	2.5%	2.3%	1.5%
Hispanic	2.9%	0.9%	1.1%	1.2%	0.6%
Other	2.9%	0.9%	1.4%	1.0%	0.5%
Aid category					
Medicaid expansion	11.6%	5.1%	4.6%	3.4%	3.0%
Other non-disabled adults	10.0%	5.4%	2.5%	3.0%	2.2%
Pregnant members	5.8%	2.1%	0.7%	2.6%	1.1%
Low-income children	0.8%	0.1%	0.1%	0.4%	0.1%
Aged	5.2%	1.7%	2.9%	0.5%	0.5%
Blind/disabled	13.2%	5.0%	5.7%	3.8%	3.3%
Region					
Central	6.8%	2.9%	2.5%	2.1%	1.5%
Charlottesville	7.0%	2.4%	2.6%	2.1%	1.7%
Northern	4.1%	1.6%	1.9%	1.4%	0.8%
Roanoke	8.7%	3.8%	2.9%	2.4%	2.3%
Southwest	10.9%	6.7%	2.6%	2.6%	3.1%
Tidewater	6.3%	2.3%	2.7%	2.1%	1.4%

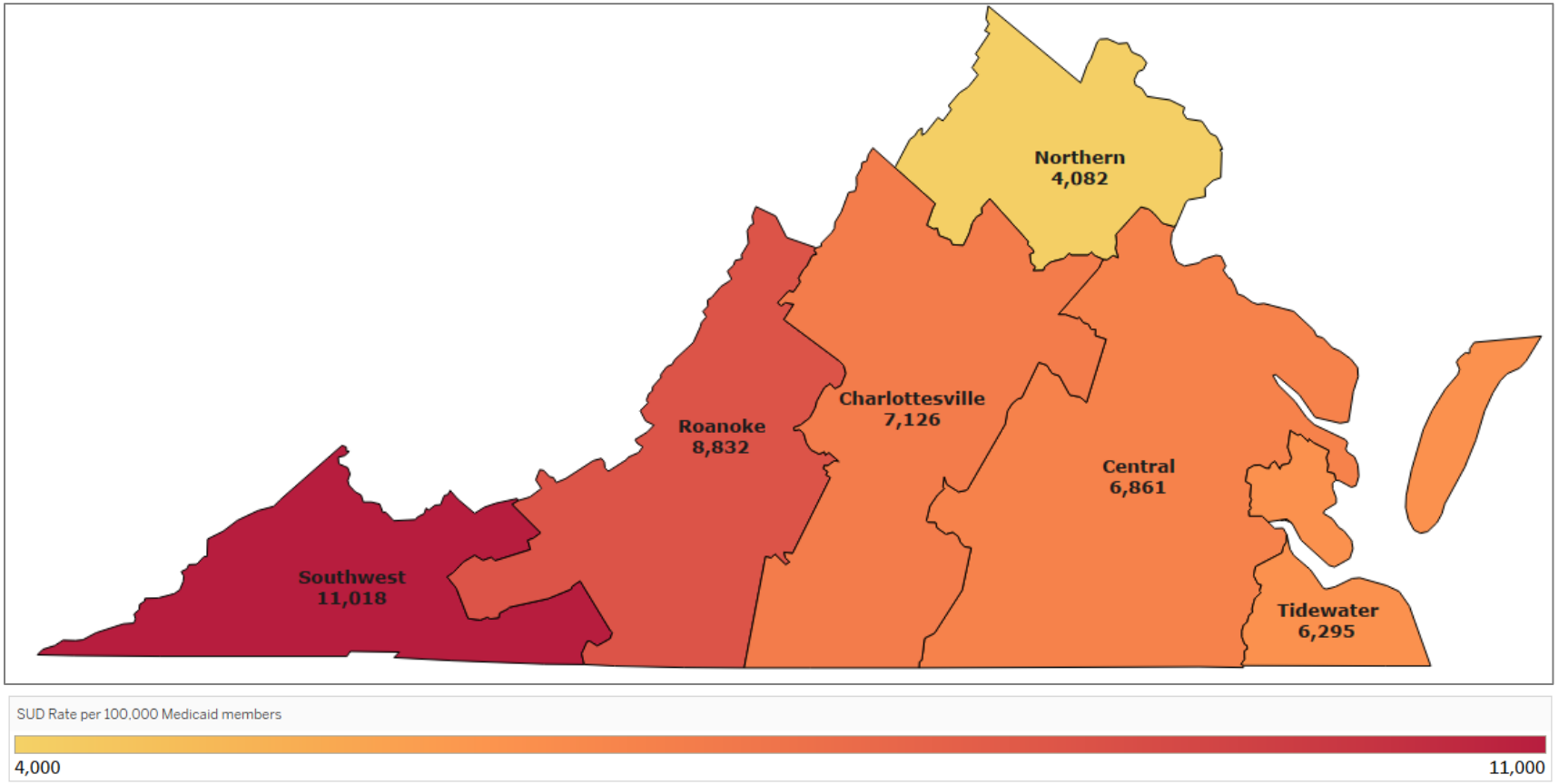
Differences by race/ethnicity, age, gender, and aid category are based on diagnosed prevalence of SUD and do not account for the potential for under-diagnosis in some sub-populations. For example, racial/ethnic differences in access to treatment services, trust in providers due to historical discrimination and racism, stigma, and other factors may result in greater under-diagnosis of SUD among Black Medicaid members and other racial/ethnic minorities. By contrast, SUD prevalence based on patient self-reports (which does not depend on a clinician's diagnosis) shows little or no disparities by race/ethnicity.[21]

On a quarterly basis, the increase in the SUD prevalence rate occurred primarily during calendar year 2020, peaking at 3,819 per 100,000 members with a SUD diagnosis in April-June 2021. The SUD prevalence rate decreased during the first two quarters of SFY2022, to 3,569 members with a SUD diagnosis by Oct-Dec 2021. This includes a decrease in the overall number of members with a SUD diagnosis between the first two quarters of SFY 2022, from 65,898 members in July-Sept 2021 to 64,795 members in Oct-Dec 2021. The reasons for the more recent decreased in SUD prevalence are unknown, nor whether these decreases are temporary or part of a longer-term trend.

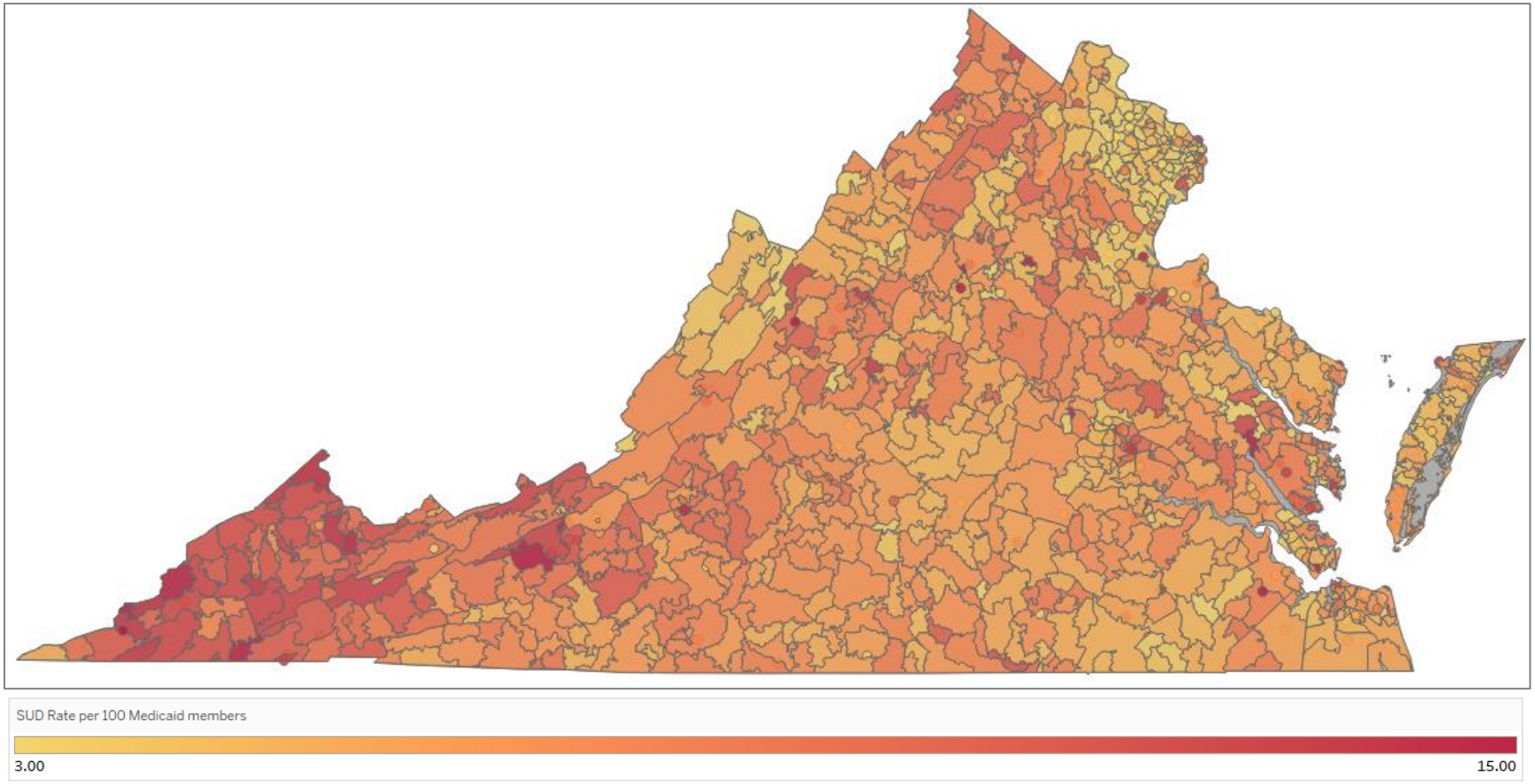


The following maps show regional variation in SUD and OUD prevalence rates. Southwest has the highest SUD and OUD diagnosed prevalence rates, while the Northern region has the lowest. However, prevalence rates computed at the zip code level show pockets of high prevalence in many areas, including some of the urban areas around Northern Virginia, Richmond, and Hampton Roads.

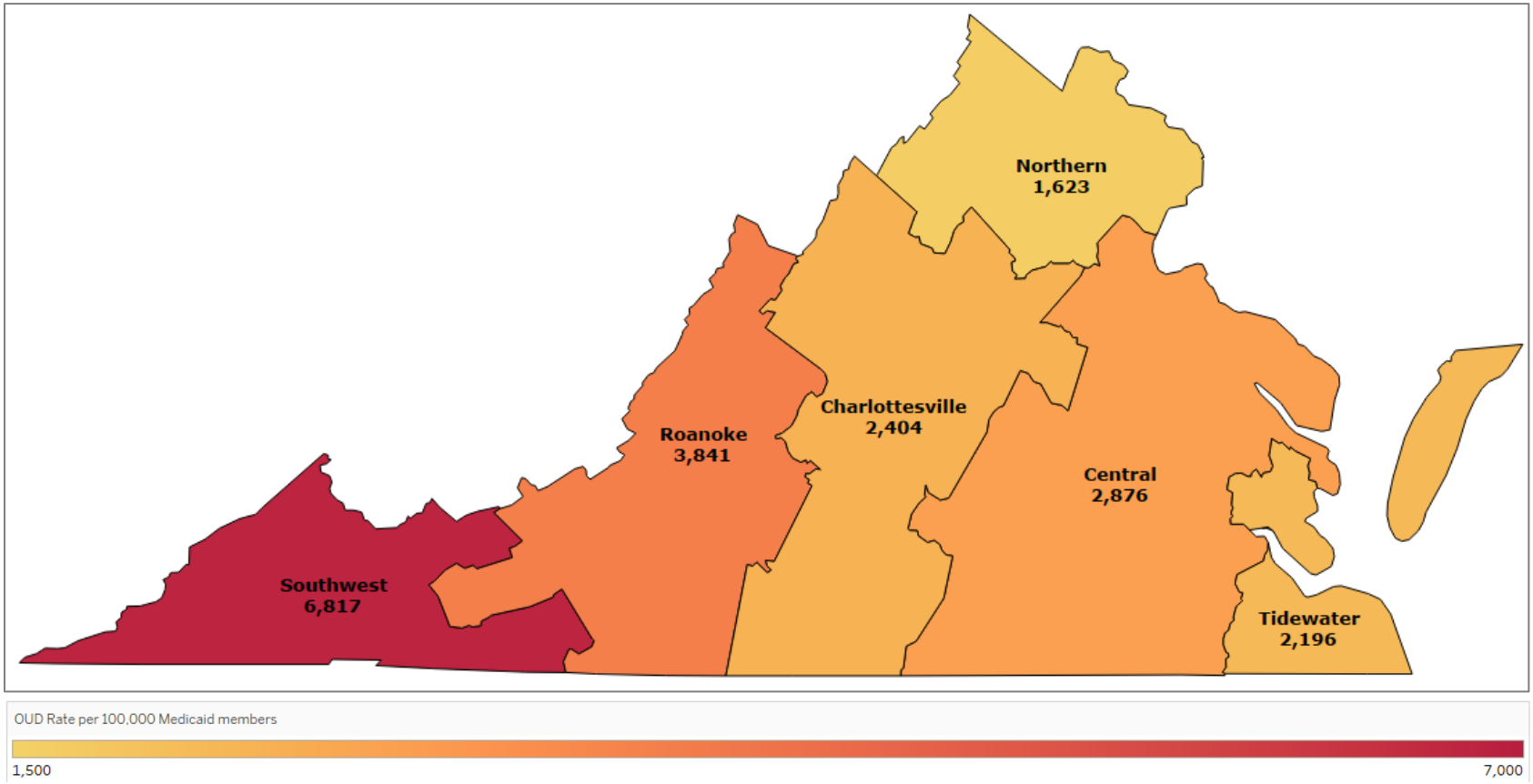
SUD Rate per 100,000 Medicaid members by Region



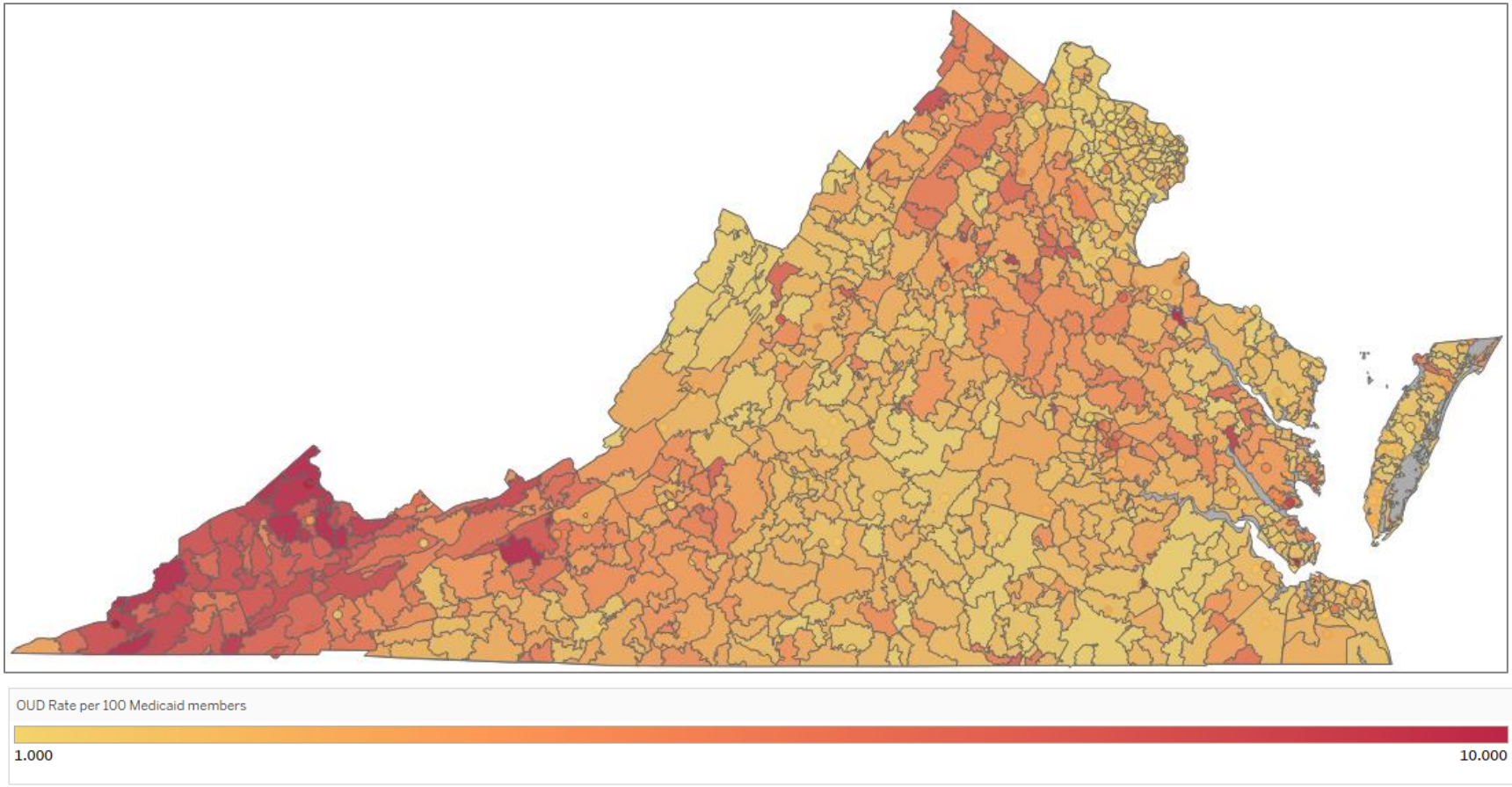
SUD Rate per 100 Medicaid members by Zip Code



OUD Rate per 100,000 Medicaid members by Region



OUD Rate per 100 Medicaid members by Zip Code



ARTS Service Utilization and Expenditures

Trends in use of ARTS services

Coverage of SUD services provided by the ARTS benefit is based on the ASAM National Practice Guidelines, which comprise a continuum of care from Early Intervention/Screening, Brief Intervention, and Referral to Treatment (SBIRT / Level 0.5), outpatient treatment (ASAM 1), intensive outpatient treatment and partial hospitalization (ASAM 2), residential treatment services (ASAM 3) and medically managed intensive inpatient services (ASAM 4).[22] ARTS also emphasizes evidence-based treatment for OUD, which combines pharmacotherapy and counseling. In July 2017, DMAS added peer recovery support services as a covered service under the ARTS benefit, which serves to facilitate recovery from SUD. Care coordination services provided by Preferred OBAT and OTPs facilitate integration of addiction treatment services with physical health and social service needs.

Number of members using ARTS services, SFY 2020 and 2021

	Number of members using services			Members using services per 100,000 members		
	SFY 2020	**SFY 2021**	**Percent change**	**SFY 2020**	**SFY 2021**	**Percent change**
Used any ARTS service	43,389	53,614	23.6%	2,627	2,912	10.8%
Type of service						
ASAM 1	35,709	43,299	21.3%	2,162	2,442	12.9%
OBAT/OTP	13,317	15,976	20.0%	806	901	11.8%
Care Coordination[1]	9,457	11,943	26.3%	573	674	17.5%
ASAM 2	4,611	5,301	15.0%	279	299	7.1%
ASAM 3	4,260	4,891	14.8%	258	276	6.9%
ASAM 4	71	144	102.8%	4	8	103.0%
Pharmacotherapy	27,050	32,724	21.0%	1,120	1,283	14.5%
Case management	3,726	4,136	11.0%	226	233	3.2%
Peer recovery support services	1,119	1,471	31.5%	68	83	22.0%

[1]Care coordination services are a subset of services also counted as part of OBAT/OTP services.

In SFY 2021, 53,614 Medicaid members used some type of ARTS services, a 23.6% increase from SFY 2020. Most members who use ARTS services use ASAM 1 outpatient services (43,299 members, or 81% of all service users). Pharmacotherapy, almost all of which is MOUD treatment, is the second most frequently used service (32,724 members).

There was also a 10.8% increase in service use per 100,000 members, from 2,627 members per 100,000 using services in SFY 2020 to 2,912 members per 100,000 using services in SFY 2021. Increases in service use per 100,000 members was especially high for ASAM 4 services (103%) and peer recovery support services (22%), although the overall use of such services is still relatively low. Care coordination services also increased by 17.5%, while pharmacotherapy increased by 14.5%.

Medicaid payment of residential treatment services (ASAM 3) is allowed under the Section 1115 Demonstration Waiver for SUD, approved in December 2016 by the Centers for Medicare and Medicaid Services (CMS) and extended in 2019. In SFY2021, 4,891 members used these services, comprising 9.1% of all members using ARTS services. The average length of stay for residential treatment was 15.5 days, which is within CMS requirements of 30 days or less for an average length of stay. The number of members using residential treatment increased 14.8% between SFY2020 and SFY2021, or a 6.9% increase of members using services per 100,000 members.

Members receiving any ARTS service, by type of diagnosis

Members with OUD diagnoses are more likely to receive ARTS services compared to members with other SUD diagnoses. Among members with any OUD diagnosis, more than two-thirds (69.4%) used some type of ARTS service in SFY 2021, compared to 43.3% of those with any SUD using any ARTS services. ARTS utilization is considerably lower among members who had SUD diagnoses other than OUD, including 27.1% for those with AUD, 34.3% among those with a diagnosis of stimulant use disorder, and 16.5% among those with a diagnosis of cannabis use disorder. In contrast to OUD, in which the clinical effectiveness of MOUD treatment has been well established, lower use of ARTS services among those with other SUD diagnoses may reflect less evidence about the effectiveness of treatment for other SUD, and greater reliance on non-medical treatment options, such as Alcoholics Anonymous and Narcotics Anonymous.

Number of members using ARTS services, by diagnosis, SFY 2021

	Members with any use of ARTS services[1]	Percent of members using ARTS services
All members	53,614	3.0%
Any SUD diagnosis	50,426	43.3%
Any OUD diagnosis	33,305	69.4%
No OUD diagnosis		
Had AUD diagnosis	11,922	27.1%
Had cannabis diagnosis	5,938	16.5%
Had stimulant diagnosis	9,341	34.3%
Had any other SUD diagnosis	4,670	17.9%

Expenditures for ARTS services

ARTS services accounted for over $294 million in SFY 2021 expenditures.[3] This is a 41% increase from SFY 2020 (not adjusted for inflation). Expenditures increased the most for ASAM 4 level services (216%) and peer recovery support services (66.7%), followed by ASAM 2, Care Coordination, and OBAT/OTP services.

Expenditures associated with ARTS utilization, SFY 2020 and 2021.

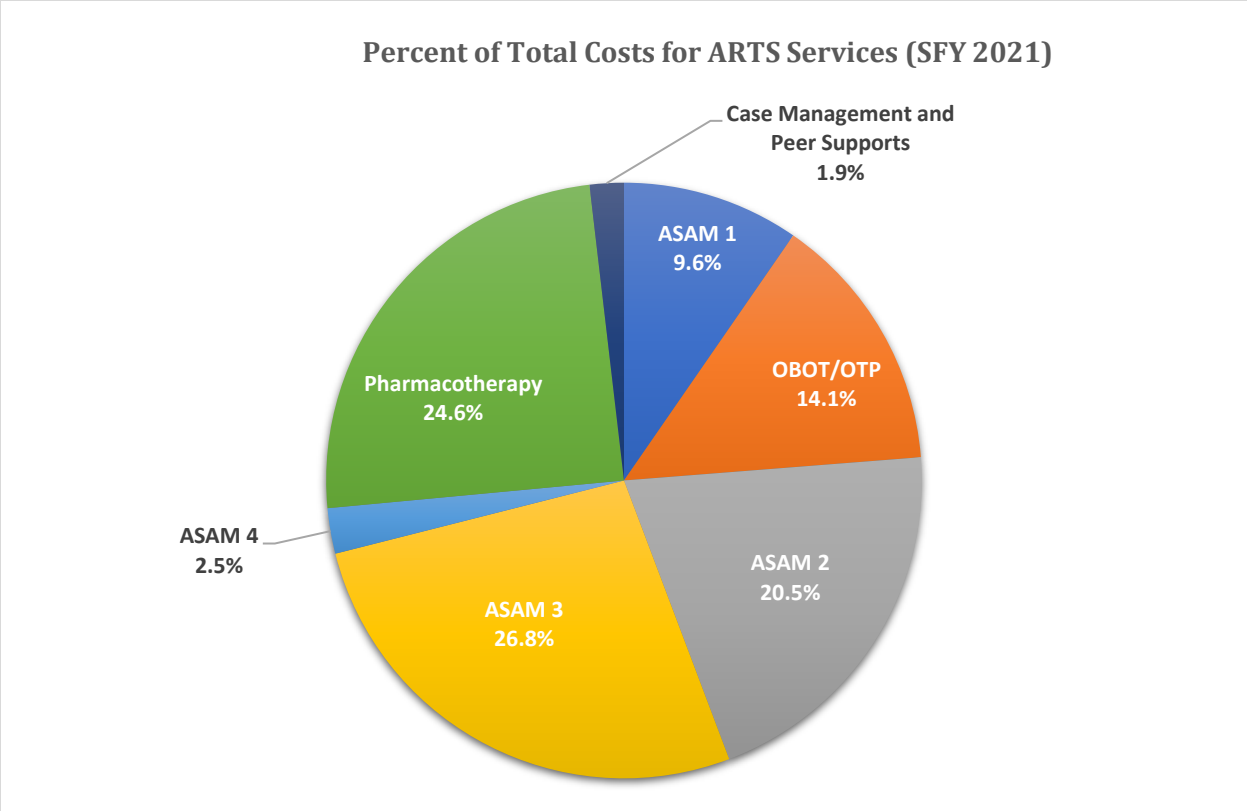
	Total expenditures for ARTS services		
	SFY 2020	**SFY 2021**	**Percent change**
Total costs for any ARTS service	$209,120,709	$294,494,664	41.0%
Type of service			
ASAM 1	$21,839,164	$28,377,952	29.9%
OBAT/OTP	$27,520,375	$41,684,324	51.5%
Care Coordination[1]	$13,728,883	$21,276,827	55.0%
ASAM 2	$38,689,539	$60,464,892	56.3%
ASAM 3	$61,398,876	$79,027,576	28.7%
ASAM 4	$2,304,281	$7,280,940	216.0%
Pharmacotherapy	$53,251,678	$72,652,777	36.4%
Case management	$3,713,463	$4,788,758	29.0%
Peer recovery support services	$403,335	$672,446	66.7%

[1]*Care coordination expenditures are a subset of expenditures for OBAT/OTP services.*

Although relatively few members utilize ASAM 3 services (residential treatment), they account for more than one-fourth of SFY 2021 ARTS expenditures (26.8%), while pharmacotherapy accounts for about another one-fourth of expenditures (24.6%) (see chart below). OBAT/OTP (which includes care coordinator services) and ASAM 1 services together account for about one-fourth of expenditures, while ASAM 4 and Case Management/Peer Support services account for small fractions.

ASAM 4 services – while infrequently utilized – are the most costly services on a per claim and per member basis, averaging $55,562 per member who used such services in SFY 2021. ASAM 3 services averaged $16,157 per user in SFY 2021, while ASAM 2 services averaged $11,406 per member. Pharmacotherapy – among the most frequently utilized ARTS services and which has demonstrated clinical effectiveness in the case of MOUD – averaged just $2,220 per member in SFY 2021.

[3] These estimates differ slightly from internal estimates from DMAS due to some differences in definition of services and the timing of when the computations were made.



Expenditures associated with ARTS utilization, SFY 2020 and 2021

	Average cost per ARTS service claim			Average cost per member using services		
	SFY 2020	**SFY 2021**	**Percent change**	**SFY 2020**	**SFY 2021**	**Percent change**
Type of service						
ASAM 1	$60	$54	**-9.4**	$612	$655	7.2%
OBAT/OTP	$21	$25	14.3	$2,067	$2,609	26.3%
Care Coordination	$237	$240	1.3	$1,452	$1,781	22.7%
ASAM 2	$362	$374	3.5	$8,391	$11,406	35.9%
ASAM 3	$611	$497	-18.7	$14,413	$16,157	12.1%
ASAM 4	$4,492	$3,810	-15.2	$32,455	$50,562	55.8%
Pharmacotherapy	$24	$26	10.3	$1,969	$2,220	12.8%
Case management	$235	$234	-0.6	$997	$1,158	16.2%
Peer recovery support services	$26	$26	-0.2	$360	$457	26.8%

Use of Medications for Opioid Use Disorder

MOUD includes the use of buprenorphine, methadone and naltrexone as part of evidence-based treatment for OUD. This method is considered the evidence-based standard of care for treating OUD and has been found to be the most effective treatment in preventing OUD-related overdoses. A previous report showed MOUD treatment rates among members with OUD increased by over 20% following implementation of the ARTS benefit (from 33.6% in 2016 to 55.0% in 2018), compared to an 8.6% increase over the same time period for Medicaid members in other states that did not implement changes on the scale of the ARTS benefit.[10] To further increase access to buprenorphine treatment beginning in March 2019, DMAS removed prior authorization requirements for suboxone films for in-network prescribers and revised Medicaid policies to ensure that members at any ASAM level of care are screened and referred for MOUD if they are in need and wish to receive this care.[23]

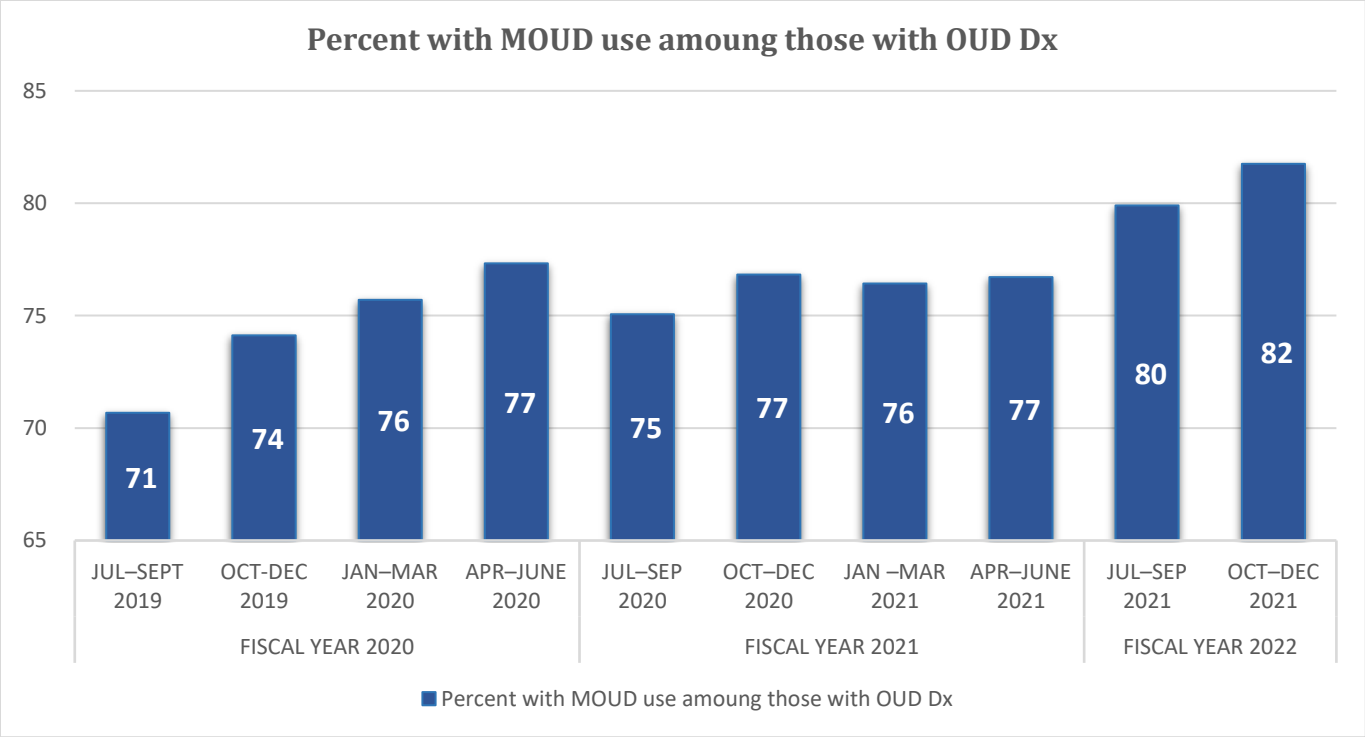
Members receiving MOUD treatment increased 21.0% from SFY 2020 to SFY 2021. As in prior years, buprenorphine treatment was the most common form of MOUD treatment (18,941 members, or 57% of all members receiving MOUD), followed by methadone treatment and naltrexone (11,278 and 4,227 members, respectively).

Medicaid members using MOUD treatment

	SFY 2020	SFY 2021	Percent change
Number of members with any MOUD use	27,254	32,964	21.0%
Buprenorphine	15,379	18,941	23.2%
Methadone	9,503	11,278	18.7%
Naltrexone	3,447	4,227	22.6%
MOUD treatment rate*	64.2%	77.7%	21.0%
Buprenorphine	36.2%	44.6%	23.2%
Methadone	22.4%	26.6%	18.7%
Naltrexone	8.1%	10.0%	22.6%

*Number of members with treatment / number of members with OUD diagnosis

MOUD treatment rates (the percent of members with OUD diagnoses who received MOUD treatment) also increased, from 64.2% in SFY 2020 to 77.7% in SFY 2021. This is a continuation of a longer-term trend since implementation of the ARTS benefit in April, 2017.[10] MOUD treatment rates continued to increase in the first two quarters of SFY 2022, to 82% for the quarter ending December 2021.


Percent with MOUD use amoung those with OUD Dx
85
80
75
70
65
71
74
76
77
75
77
76
77
80
82
JUL–SEPT 2019
OCT-DEC 2019
JAN–MAR 2020
APR–JUNE 2020
JUL–SEP 2020
OCT–DEC 2020
JAN –MAR 2021
APR–JUNE 2021
JUL–SEP 2021
OCT–DEC 2021
FISCAL YEAR 2020
FISCAL YEAR 2021
FISCAL YEAR 2022
Percent with MOUD use amoung those with OUD Dx

Emergency Department Use Related to SUD

Hospital ED visits related to SUD include fatal and nonfatal overdoses as well as other acute events directly or indirectly related to SUD. Previous analyses of the ARTS benefit showed a marked decrease in ED visits among members with OUD following implementation of the ARTS benefit relative to members who did not have a diagnosed OUD.[11] However, SUD-related ED visits increased substantially in recent years, from 70,987 visits in SFY 2020 to 80,426 visits in SFY 2021, a 13.3% increase. In addition, OUD-related ED visits increased 23.6% between SFY 2020 and SFY 2021. By comparison, ED visits for all causes decreased by 8.7%.

Emergency department visits among Medicaid members, SFY 2020 and 2021

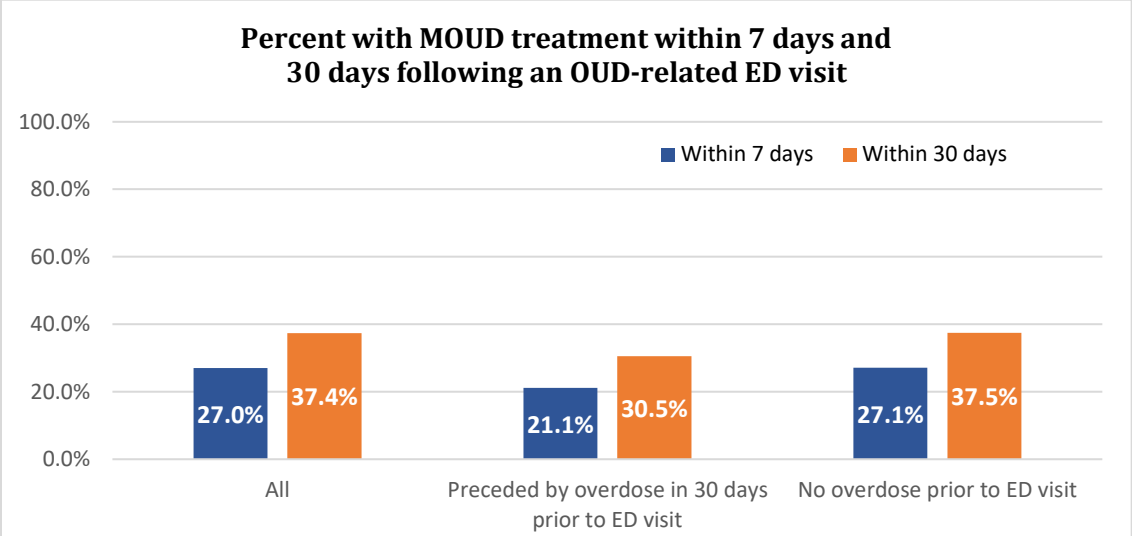
	SFY 2020	SFY 2021	Percent change
ED visits (all cause)			
Number of members with a visit	535,346	495,635	-7.4%
Total number of visits	1,154,685	1,054,744	-8.7%
SUD-related ED visits			
Number of members with a visit	38,829	44,915	15.7%
Total number of visits	70,978	80,426	13.3%
OUD-related ED visits			
Number of members with a visit	9,704	11,703	20.6%
Total number of visits	13,877	17,146	23.6%
ED visits per 1,000 members (all cause)			
Number of members with visit	324.1	279.5	-13.8%
Total visits	699.1	594.8	-14.9%
SUD-related ED visits per 1,000 members			
Number of members with visit	23.5	25.3	7.7%
Total visits	43.0	45.4	5.6%
OUD-related ED visits			
Total members with visit	5.9	6.6	11.9%
Total visits	8.4	9.7	15.5%

SUD-related ED visits have continued to increase, even after adjusting for increases in Medicaid enrollment during the period. There were 45.4 SUD-related ED visits per 1,000 members in SFY 2021, a 5.6% increase from the prior year. Also, there were 9.7 OUD-related ED visits per 1,000 members in SFY 2021, a 15.5% increase from the prior year. By comparison, the overall number of ED visits per 1,000 Medicaid members decreased by almost 15% from SFY 2020 to SFY 2021.

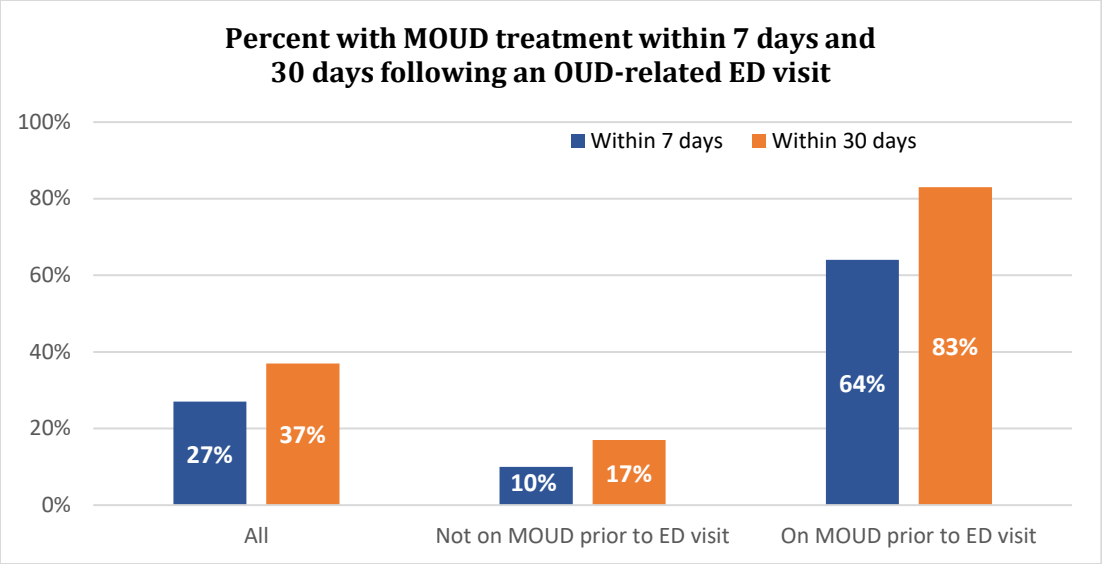
Care Transitions

Follow Up after OUD-Related Emergency Department Visits

Getting patients started on MOUD while at the ED or shortly thereafter is considered crucial for preventing overdoses. Receiving treatment within 7 days of an OUD-related emergency department visit is considered a key measure of treatment quality. From 2016 to 2018, only about 15 percent of Medicaid members in 11 states actually received a follow up visit within 7 days of an OUD-related ED visit.[24] The metric of an ED follow-up visit used by the National Committee for Quality Assurance (NCQA) does not explicitly identify MOUD as part of the follow up care.[25] However, a follow-up visit with a clinician may not be as effective in preventing future overdoses if it does not involve getting patients to initiate or continue with MOUD treatment. To this end, many health systems have started "ED-Bridge" programs that seek to get OUD patients started on buprenorphine treatment in the emergency department and provide them with a warm handoff to treatment providers in the community for follow up treatment and maintenance of MOUD after the ED visit.[26] For Medicaid members who had an ED visit with a primary diagnosis of OUD, 27% received MOUD treatment within 7 days of the visit, while 37% received MOUD treatment within 30 days of the visit.



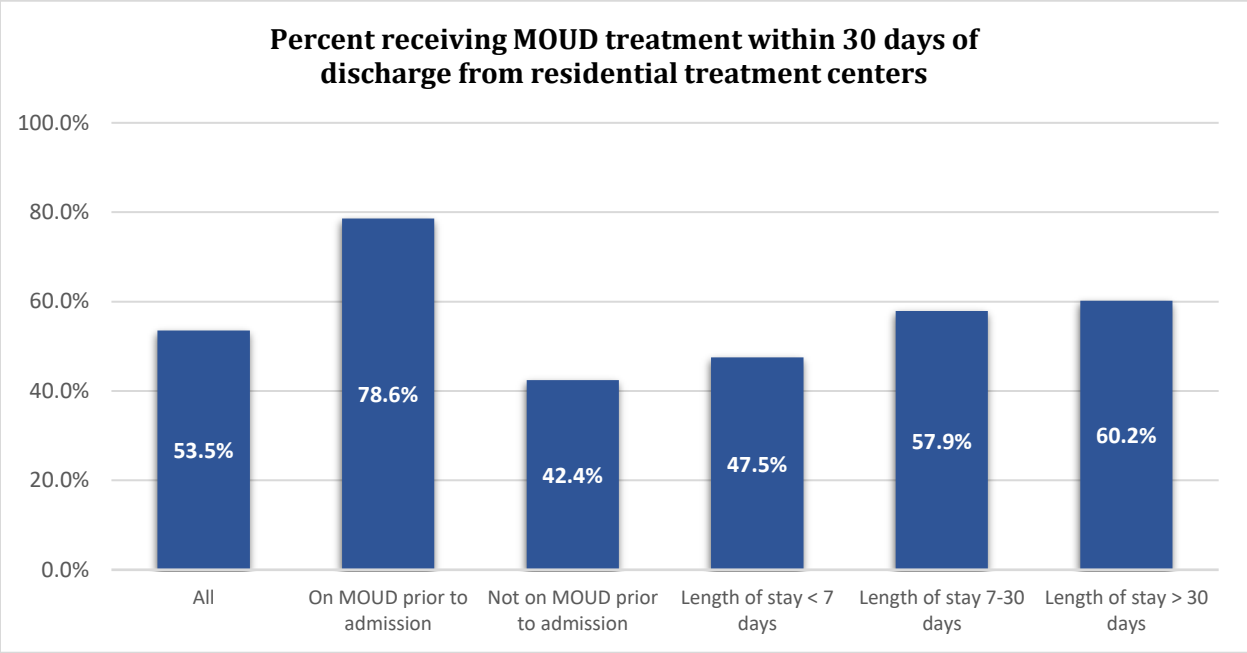
Members who had an overdose in the 30 days prior to the ED visit were somewhat less likely to receive MOUD treatment (21%) within 7 days compared to those who did not have an overdose prior to the ED visit (27%). Members who had not been receiving MOUD treatment prior to the ED visit were less likely to follow up with MOUD treatment compared to those who had been receiving MOUD treatment prior to the ED visit.



Follow Up after Residential Treatment for OUD

Successful transitions after discharge from residential treatment (ASAM level 3 stays) should also include either initiation or continuation of MOUD treatment. Relative to those who do not receive follow-up care after discharge, continuity of care after discharge is a significant predictor of: recovery,[27] remaining abstinent within a year post-discharge,[28] and lower likelihood of mortality within 2 years of discharge.[29] To help ensure continuity, DMAS requires residential treatment providers to document the transition plan on the service authorization for residential treatment.

In contrast to follow up after ED visits, more than half of members (53.5%) discharged from residential treatment centers received MOUD within 30 days of discharge. The rate of MOUD follow up was considerably higher among those who were receiving MOUD prior to admission to the facility (78.6%) compared to those not receiving MOUD prior to admission (42.4%). MOUD receipt was also higher among those with stays of greater than one week or more, compared to those with lengths of stay that lasted less than a week. Multi-state analyses utilizing multivariate methods also showed that prior receipt of MOUD and longer lengths of stay were significant predictors of follow-up treatment after discharge.[30]



OUD diagnosis and treatment following release from prison

Prior research has shown that formerly incarcerated individuals have higher prevalence of SUD and OUD. They are also at higher risk of both fatal and nonfatal overdoses after release from prison or jail, with the highest risk for death occurring immediately after incarceration.[31,32] Therefore, screening for SUD and OUD just before or immediately after release from incarceration is essential for getting formerly incarcerated individuals into treatment and preventing overdoses.

Individuals who are incarcerated can apply for Medicaid at any time. If they apply for Medicaid when their expected release date exceeds 45 days, they will be evaluated for Incarcerated Coverage (limited benefit hospitalization coverage). They can apply up to 45 days before their expected release date if they want coverage following release ("Reentry Application" through the Cover Virginia Incarcerated Unit (CVIU)). Medicaid expansion has increased eligibility for many formerly incarcerated adults through the CVIU mechanism.

By linking Virginia Department of Corrections data to Medicaid enrollment and claims data, the analysis identified Medicaid members recently released from prison, and examined their OUD prevalence, treatment, and rates of overdoses. The analysis is restricted to members released from state prisons and does not include those released from jails.

Of the 10,005 individuals ages 18-64 who were released from prison between July 2019 and June 2021, 8,253 (82.4%) enrolled in full Medicaid benefits within 6 months of release. Most of these individuals (82%) were enrolled in Medicaid within a few days of their release. In comparing formerly incarcerated Medicaid enrollees with other new Medicaid enrollees, those released from prison were more than four times as likely to be diagnosed with an OUD within 6 months of Medicaid enrollment compared to other new enrollees (132 diagnosed with OUD per 1,000 formerly incarcerated members compared to 32 for other new enrollees). Also, formerly

incarcerated were 4.75 times as likely to experience a fatal or nonfatal overdose within 6 months of enrollment compared to other new enrollees (11.4 overdoses per 1,000 formerly incarcerated members compared to 2.4 overdoses per 1,000 other new enrollees). About one-fourth of overdoses occurred within 2 weeks of release from prison among the formerly incarcerated (findings not shown).

OUD prevalence and overdoses among newly enrolled Medicaid members

	Released from prison and enrolled in Medicaid (7/1/19 – 6/30/21)	Other new enrollees not preceded by prison release (1/1/20 – 12/31/21)
Number released from prison	10,005	Not applicable
Number enrolled in Medicaid[1]	8,253	292,320
OUD diagnosis within 6 months, per 1,000 new enrollees	131.5	31.8
OUD-related overdose within 6 months, per 1,000 new enrollees (fatal and nonfatal)	11.4	2.4

[1]Includes Medicaid enrollment within 6 months of release for those released from prison during the study period. For new Medicaid enrollees not preceded by a prison release, excludes those who had any enrollment in full Medicaid benefits within 6 months of enrollment. Sample restricted to those ages 18-64 with 6 months continuous enrollment after Medicaid enrollment date.

Despite the higher OUD prevalence and overdose risk among formerly incarcerated, they tend to have higher treatment rates for OUD compared to other new Medicaid enrollees diagnosed with an OUD. For example, 83.4% of formerly incarcerated with an OUD diagnosis had an outpatient visit with a primary diagnosis of OUD, compared to 70.6% of other new enrollees with an OUD diagnosis. Similarly, 88.4% of formerly incarcerated with OUD received MOUD treatment, compared to 67.7% of other new enrollees with OUD. Residential treatment, emergency department, and inpatient treatment for OUD tended to be lower among the recently incarcerated compared to other new Medicaid enrollees. And despite the overall higher rates of overdoses, recently incarcerated with any OUD diagnosis had only slightly higher overdose rates (8.7%) compared to other new enrollees with an OUD diagnosis (7.7%). Although these findings suggest that many formerly incarcerated individuals are receiving treatment services once they are diagnosed, it is unknown to what extent under-diagnosis of SUD and OUD is greater among this population compared to other Medicaid members.

OUD diagnosis, treatment, and outcomes within 6 months of Medicaid enrollment.

	Released from prison and enrolled in Medicaid (7/1/19 – 6/30/21)	Other new enrollees not preceded by prison release (1/1/20 – 12/31/21)
Members with OUD diagnosis	1,085	9,306
Utilization of OUD-related services		
Outpatient visits with a primary diagnosis of OUD	905 (83.4%)	6,566 (70.6%)
MOUD use (buprenorphine, methadone, or naltrexone)	800 (88.4%)	6,304 (67.7%)
Residential treatment stay	44 (4.1%)	590 (6.3%)
ED visits with a primary diagnosis of OUD	51 (4.7%)	670
Inpatient hospitalization claim with a primary diagnosis of OUD	43 (4.0%)	577 (6.2%)
Opioid-related overdose	94 (8.7%)	713 (7.7%)

[1]Includes Medicaid enrollment within 6 months of release for those released from prison during the study period. For new Medicaid enrollees not preceded by a prison release, excludes those who had any enrollment in full Medicaid benefits within 6 months of enrollment. Sample restricted to those ages 18-64 with 6 months continuous enrollment after Medicaid enrollment date.

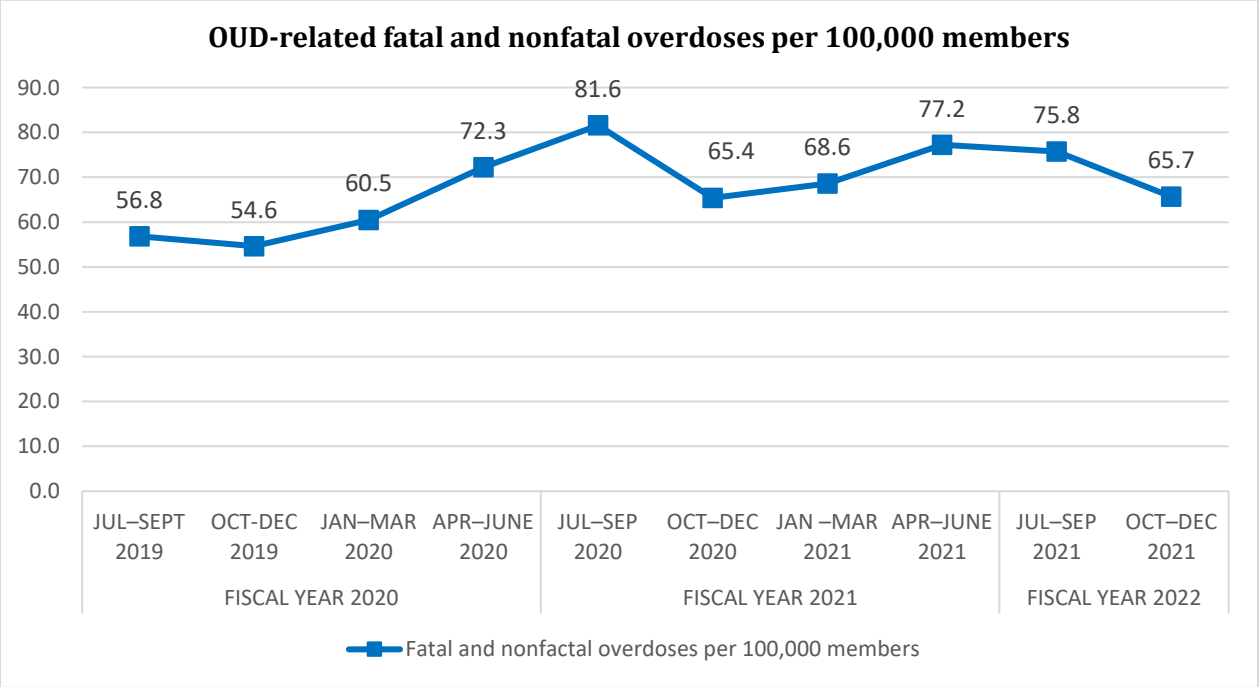
OUD-Related Overdoses

In SFY 2021, there were 4,362 opioid-related overdoses (fatal and nonfatal) among Medicaid members, as reported in the claims data. Consistent with state and national increases in overdose deaths, this represents a 34.1% increase from SFY 2020. Similarly, the rate of opioid-related overdoses per 100,000 members increased 24.9%, from 197 overdoses in SFY 2020 to 246 overdoses per 100,000 members in SFY 2021. Among those with an OUD diagnosis, the proportion with an overdose increased from 7.7% in SFY 2020 to 9.1% in SFY 2021.

OUD-related overdoses among Medicaid members, SFY 2020 and 2021

	SFY 2020	SFY 2021	Percent change
Number of OUD-related overdoses	3,252	4,362	34.1%
OUD-related overdoses per 100,000 members	196.9	246.0	24.9%
Percent with OUD-related overdose among those with OUD diagnosis	7.7%	9.1%	18.6%

A closer look at overdose rates by quarter shows a sharp increase in overdoses near the start of the COVID-19 pandemic in April through September 2020. After peaking at 81.6 overdoses per 100,000 members in July-September 2020, the overdose rate decreased to 65.4 per 100,000 during October-December 2020. Since December 2020, the number of overdoses has mostly held relatively steady between 65.7 and 77.2 per 100,000 members.



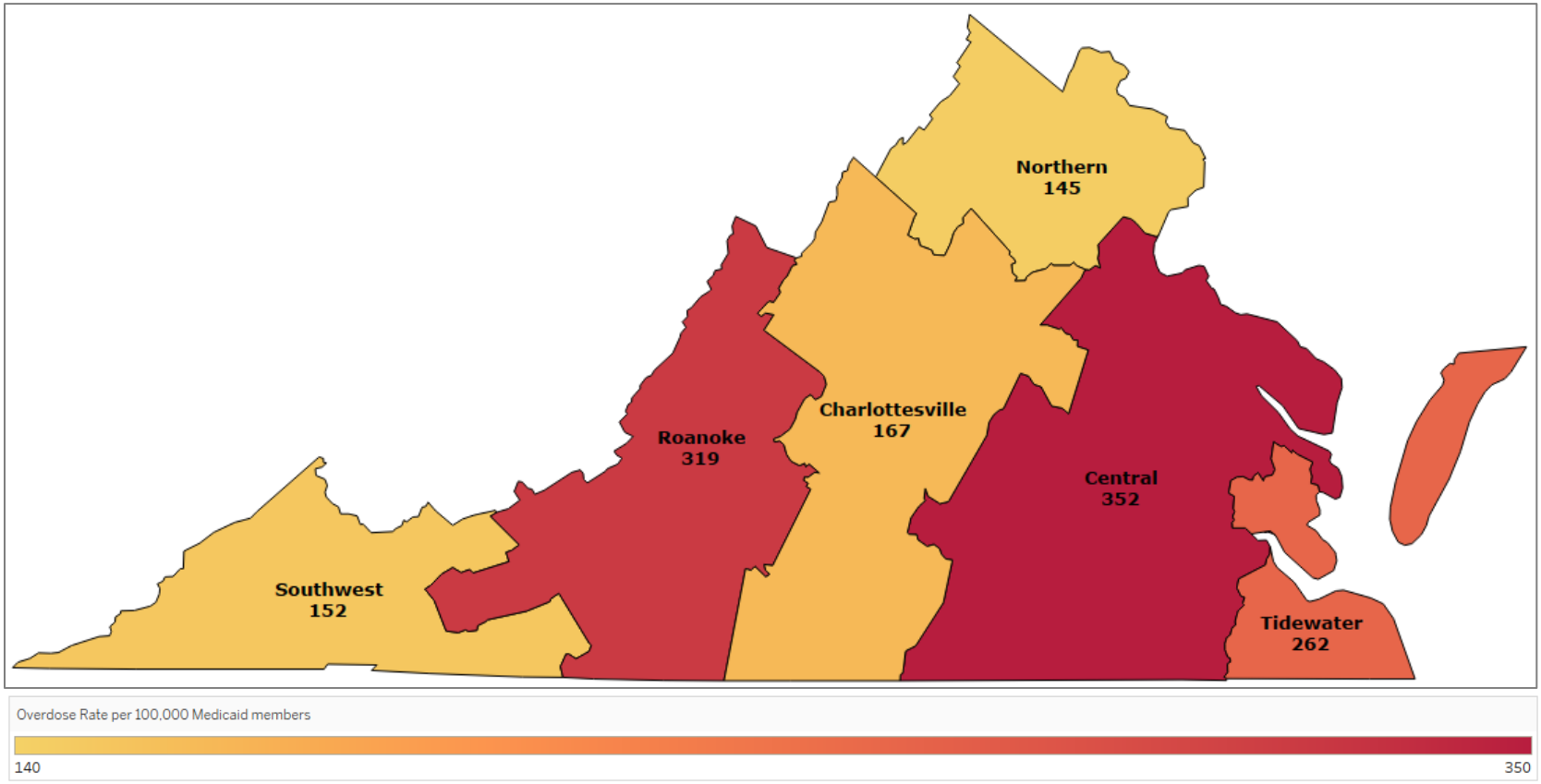
Consistent with trends in OUD prevalence, overdose rates tend to be higher among nonelderly adults, males, and Non-Hispanic Whites. Among Medicaid eligibility categories, overdose rates are highest among Medicaid expansion members and other nondisabled adults (consistent with the higher rates among nonelderly adults) as well as members in the blind and disabled eligibility group.

OUD-related overdoses, by member characteristics

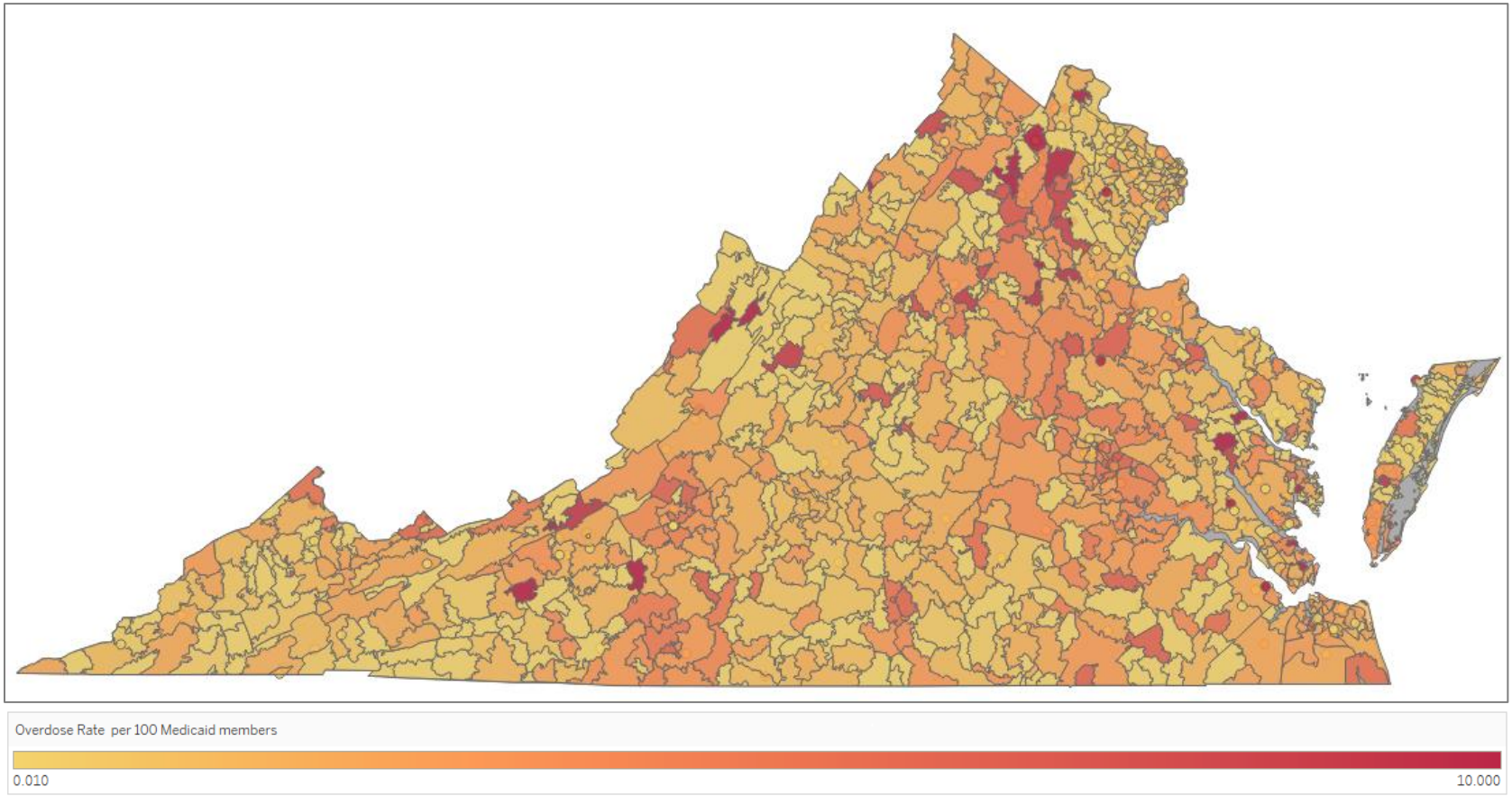
	Medicaid members with overdoses	Overdose rate per 100,000 members
All members[1]	4,362	246.0
Age		
12-21	242	63.2
22-34	1,493	446.6
35-44	1,072	537.1
45-54	784	525.9
55-64	603	396.7
65+	128	127.5
Sex		
Male	2,705	344.6
Female	1,659	167.4
Race/ethnicity		
White, NH	2,628	289.2
Black, NH	1,495	242.3
Hispanic	70	105.4
Other	169	93.3
Aid category		
Medicaid expansion	2,879	491.1
Other non-disabled adults	509	302.9
Pregnant women	40	89.9
Low income children	118	18.1
Aged Adults	116	125.1
Blind/Disabled	683	422.8

The maps below show OUD-related overdose rates by region, as well as by zip code area. While the Southwest region has the highest OUD prevalence rate, it has a lower overdose rate relative to Roanoke, Central, and Tidewater regions. It should be noted that counts of overdoses based on health care claims may be undercounted in rural areas (and heavily rural regions), where there are fewer providers and possibly more overdoses not observed by health care providers.

Overdose Rate per 100,000 Medicaid members by Region



Overdose Rate per 100 Medicaid members by Zip Code



Most Members with overdoses were not receiving MOUD treatment

Most members who had OUD-related overdoses were not receiving MOUD treatment prior to the overdose. Of the 4,362 overdoses in SFY 2021, 60.3% had not received any MOUD treatment in the 12 months prior to the overdose, while 83.8% did not receive MOUD treatment in the month prior to the overdose.

There was a small increase in the percent of members with overdoses who had received MOUD treatment in the 12 months prior to the overdose, from 35.9% among overdoses that occurred in SFY 2020 to 39.7% in SFY 2021. There was no change in the proportion of members with overdoses who received MOUD in the month prior to the overdose (16.2%). Of the total increase in 1,110 members with an OUD-related overdose between SFY 2020 and 2021, 50.9% of the increase is accounted for by members who received MOUD treatment in the 12 months prior to the overdose, while 16.3% is accounted for by members who received MOUD treatment in the month prior to the overdose.

OUD-related overdoses that involved MOUD treatment

	SFY 2020		SFY 2021	
	Number	As Percent of Total Overdoses	Number	As Percent of Total Overdoses
Total number of overdoses	**3,252**		**4,362**	
Any MOUD use in 12 months prior to date of overdose				
Yes	1,167	35.9%	1,732	39.7%
No	2,085	64.1%	2,630	60.3%
Any MOUD use in 30 days prior to date of overdose				
Yes	527	16.2%	708	16.2%
No	2,725	83.8%	3,654	83.8%

Conclusion

SUD prevalence among Medicaid members continued to increase between SFY 2020 and 2021, both in the overall number of Medicaid members with a diagnosed SUD as well as on a per member basis. However, the rate of increase in SUD prevalence (6.5% on a per member basis) was much lower than in prior years (16% between SFY 2019 and 2020) which was influenced by new Medicaid members with SUD enrolling through Medicaid expansion,[2] and possibly the early effects of the COVID-19 pandemic. Although OUD-related overdoses (fatal and nonfatal) increased between SFY 2020 and 2021, overdoses leveled off and declined somewhat during the first two quarters of SFY 2022 (July through December 2021). This is consistent with an apparent statewide decline in fatal overdoses projected for 2022 in Virginia, driven primarily by a leveling off of fentanyl-related overdoses.[1,3] While it is unclear whether the recent decrease in overdoses is temporary or part of a longer-term trend, it may signal an easing of the social, economic, and psychological stresses that contributed to a spike in overdoses during the early years of COVID-19.

Access to and use of ARTS services also continues to increase, as it has since the implementation of the ARTS benefit in 2017. Treatment providers of all types continued to increase in the past year, as well as utilization of ARTS services. Especially notable was the increase in MOUD treatment rates among those with an OUD diagnosis, from 64% in SFY 2020 to 78% in SFY 2021, with the increase continuing in the first two quarters of SFY 2022. Among Medicaid members who had an overdose in SFY 2021, only 16% were receiving MOUD treatment in the 30 days prior to the overdose. The increase in MOUD treatment likely reflects the increase in treatment providers, the removal of prior authorization requirements for suboxone films for in-network prescribers beginning in March 2019 and new initiatives and procedural flexibilities implemented at the beginning of the COVID-19 pandemic that made it easier to access buprenorphine and methadone from home. Greater acceptance and reduced stigma of MOUD treatment by patients, providers, and others in the community may also contribute to higher treatment rates.

Despite these gains, some gaps in treatment remain. While access to providers who prescribe buprenorphine may have increased, there is uneven access to pharmacies that dispense buprenorphine across the state. Retail pharmacies that dispense buprenorphine tend to be more available in urban areas of the state, while some rural areas with high OUD prevalence (Southwest region, for example) may have limited accessibility. There are fewer pharmacies dispensing buprenorphine in Southwest relative to OUD prevalence in this area. This could lead to some members having to travel excessively long distances to obtain buprenorphine medications, which may affect their willingness to initiate and continue with buprenorphine treatment.

Gaps in care transitions after discharge from hospital emergency departments and residential treatment centers for OUD remain, with only 37% and 54%, respectively, receiving MOUD treatment within 30 days of discharge. Treatment rates are relatively high following release from prison for former inmates who are diagnosed with OUD, although the analysis did not assess members who had shorter term stays in local jails. Relatively high Medicaid enrollment and treatment rates among those released from prison may reflect efforts by Department of Corrections officials to screen inmates who are about to be released for SUD and Medicaid eligibility. Finally, while OUD still is the most prevalent SUD diagnosis, prevalence has increased the most for SUD

diagnoses related to other substances, such as cannabis, hallucinogens, and simulants. Use of ARTS services for these other substances remains much lower than that related to OUD diagnoses, which may reflect the lack of pharmacological and other medical treatment options for these diagnoses.

The Commonwealth of Virginia has made substantial progress since the implementation of the ARTS benefit in 2017 in building a robust treatment infrastructure for Medicaid members, with the number of treatment providers, members using services, and treatment rates for those with SUD diagnoses increasing every year since 2017. Continued progress will depend in part on addressing ongoing gaps in treatment, especially care transitions following discharges from hospitals and residential treatment centers, as well as uneven access to providers and pharmacies in some areas of the state. System capacity to treat patients may also benefit in the future to the extent that COVID-19 related increases in SUD prevalence and overdoses have leveled off and continue to decrease.

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